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RESERVOIR TEMPERATURES IN NORTH-CENTRAL ALABAMA

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BULLETIN 82

RESERVOIR TEMPERATURES IN NORTH-CENTRAL ALABAMA

By L. B. Peirce

Prepared by the United States Geological Survey
in cooperation with the
Alabama Water Improvement Commission and the
Geological Survey of Alabama

UNIVERSITY, ALABAMA

1964

STATE OF ALABAMA

Honorable George C. Wallace, Governor

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September 28, 1964

Honorable George C. Wallace
Governor of Alabama
Montgomery, Alabama

Dear Governor Wallace:

I have the honor to transmit the manuscript of a report entitled "Reservoir Temperatures in North-Central Alabama," by L. B. Peirce, with the request that it be printed as Bulletin 82 of the Geological Survey of Alabama.

The temperature of water is an important environmental factor that influences sediment transport, rates of chemical reaction, and biological processes. Water temperature is also important to wildlife conservation because it influences the saturation of water with oxygen from the air. The temperature of water is important in industry, particularly where large quantities of water are used for cooling. The facts on water temperature are important, therefore, to industrial concerns considering an area for industrial development.

Data for the thermal surveys included in this report indicate the approximate annual range in water temperature to be expected at various depths during a climatically typical year. For example, temperatures just under the surface may range from 40° F to 95° F; at depths of 80 feet or greater a much smaller range, from 44° F to 50° F, may be expected.

Respectfully,

Philip E. LaMoreaux

Philip E. LaMoreaux
State Geologist

CONTENTS

	Page
Abstract	1
Introduction	2
Purpose and scope	3
Cooperation and acknowledgment	5
Collection of water-temperature data	6
Methods of observation	6
Descriptions of storage impoundments	8
Inland Lake	8
Lay Lake	14
Sylacauga Reservoir	20
Tuscaloosa County Lake	24
Walker County Lake	27
Seasonal variations in reservoir temperature	30
Heating of lakes and reservoirs	30
Mechanics of thermal stratification	31
Seasonal pattern of thermal stratification	31
Effects of inflow, outflow, and wind	35
Results of thermal surveys	37
Inland Lake	37
Lay Lake	43
Sylacauga Reservoir, Tuscaloosa and Walker County Lakes	45
Conclusions	51
Reservoir temperature data	53
Inland Lake	54
Lay Lake	66
Sylacauga Reservoir	87
Tuscaloosa County Lake	95
Walker County Lake	100
Selected references	103

ILLUSTRATIONS

Figure 1.	Map of Alabama showing locations of reservoirs in which thermal surveys were made	5
2.	Equipment used in thermal surveys	7
3.	Inland Lake showing locations of depth profiles and thermal surveys	10
4.	Cross sections at observation ranges 1-3, Inland Lake	11
5.	Cross sections at observation ranges 4-7, Inland Lake	12

CONTENTS

		Page
Figure 6.	Cross sections at observation ranges 8-11, Inland Lake	13
7.	Lay Lake showing locations of depth profiles and thermal surveys	15
8.	Cross sections at observation ranges 1-4, Lay Lake	16
9.	Cross sections at observation ranges 5-8, Lay Lake	17
10.	Cross sections at observation ranges 9-12, Lay Lake	18
11.	Cross sections at observation ranges 13-15, Lay Lake	19
12.	Sylacauga Reservoir showing locations of depth profiles and thermal surveys	21
13.	Cross sections at observation ranges 1-7, Sylacauga Reservoir	22
14.	Cross sections at observation ranges 8-10, Sylacauga Reservoir	23
15.	Tuscaloosa County Lake showing locations of depth profiles and thermal surveys	25
16.	Cross sections at observation ranges, Tuscaloosa County Lake	26
17.	Walker County Lake showing locations of depth profiles and thermal surveys	28
18.	Cross sections at observation ranges, Walker County Lake	29
19.	Water temperature-density relation	32
20.	Idealized diagram of annual cycle of thermal stratification	34
21.	Temperature profiles observed along range 2, Inland Lake	38
22.	Seasonal variation of water temperature at selected depths in Inland Lake, 1959-60	41
23.	Thermal distribution of water in Inland Lake on August 2, 1960	42
24.	Temperature profiles observed along range 2, Lay Lake	44
25.	Seasonal variation of water temperature at selected depths in Lay Lake, 1959-60	46
26.	Temperature profiles observed along range 2, Sylacauga Reservoir	47
27.	Temperature profiles observed along range 1, Tuscaloosa County Lake	48
28.	Temperature profiles observed along range 1, Walker County Lake	49
29.	Maximum and minimum daily air temperatures at Sylacauga, Ala., January 1960	50
30.	Annual range in water temperature with depth in static impoundments of north-central Alabama	52

RESERVOIR TEMPERATURES IN NORTH-CENTRAL ALABAMA

By L. B. Peirce

ABSTRACT

The interaction of air and water temperature, water density, and wind during the different seasons of the year produces a characteristic annual pattern of thermal stratification in deep storage impoundments in north-central Alabama. The seasonal pattern of thermal stratification occurring in relatively quiescent or static impoundments is indicated by the results of thermal surveys of Inland Lake, Sylacauga Reservoir, Tuscaloosa County Lake, and Walker County Lake. Vertical temperature profiles were observed in these impoundments, which range from 40 to 160 feet in maximum depth, at intervals of 4 to 6 weeks for a period of nearly 1 year.

Thermal stratification was observed to begin in March and reach its peak development in August and September. By early December, vertical mixing by thermal convection had destroyed the temperature gradient, and the reservoirs were of virtually uniform temperature from surface to bottom. This thermally homogeneous condition, or period of "fall-over turning", generally continued with further uniform cooling of the entire water body until the following spring. Ordinarily, winters are not severe enough to produce complete or lasting ice cover, so that the condition of "winter stagnation", which accompanies persistent ice cover on reservoirs in higher latitudes, is not experienced.

Data from the thermal surveys indicate the approximate annual range in water temperature to be expected at various depths during a climatically typical year. For example, temperature just under the surface may range from 40°F to 95°F; at depths of 80 feet or greater, a much smaller range from 44°F to 50°F may be expected.

The thermal behavior of dynamic impoundments, or those in which inflow and outflow are relatively large in relation to storage capacity, was investigated by a similar thermal survey of Lay Lake, a hydroelectric power reservoir on Coosa River. Thermal stratification in this reservoir tends to follow the same seasonal pattern observed in the other four reservoirs, but the vertical temperature gradients are much reduced by inflow and turbulent mixing. The annual range of surface temperatures in Lay Lake is about the same as in Inland Lake; however, at the 50-foot depth, for example, the temperature range in Lay Lake is more than three times that in Inland Lake.

INTRODUCTION

The temperature and the variations in temperature of water stored behind a dam often are important factors determining the overall effectiveness with which the impoundment serves a particular purpose. This is obviously true of an impoundment intended to furnish water for cooling purposes, for in this case the temperature of the water is the primary consideration, and any heat retained by the water in excess of that needed to deliver it in the liquid state to the user can be regarded as a contaminant. Because of the close relationship between water temperature and water quality, water temperature also is important in reservoirs designed to supply water for domestic use, industry, or merely to provide recreational facilities. In the case of impoundments designed to serve as navigation pools or as power reservoirs, the temperature of the water may have little direct bearing on the primary function of the impoundment, but it remains an important consideration because of the possible effects of such impoundments on the quality of water released for use downstream.

Water temperature is important in the hydraulic and sanitary management of water because the physical, chemical, and biological properties of water are partly functions of temperature. Thus, temperature measurements are useful not only in defining the capability of water to absorb and to transfer heat, but also in determining the density, viscosity, vapor pressure, and surface tension of the fluid, its power of solution and suspension, and the rates at which chemical, biochemical, and biological processes can take place in it.

For example, the temperature of water governs the saturation level of dissolved oxygen, which is essential both for the support of aquatic life and the removal of organic wastes through the processes of biochemical oxidation. Because water at normal temperatures (50°F) holds in solution only 0.8 percent, by volume, of oxygen (in contrast to air, which is about 21 percent oxygen), aquatic organisims in general are more sensitive than terrestrial organisms to changes in the gaseous oxygen level and temperature of their environment. Hence, relatively moderate differences in water temperature may have an appreciable effect on the metabolism of aquatic life. Changes in temperature sufficient to cause the wholesale growth or death of micro-organisms, plankton, or higher life

forms, may degrade water quality with respect to taste, odor, color, and appearance.

The temperature of water in impoundments does, of course, vary throughout the year. Moreover, in deep impoundments that are substantially quiescent or static—that is, not subject to high rates of inflow and outflow and to the effects of strong winds—the seasonal variation in water temperature is found to be markedly different at various depths. This phenomenon results from the formation of thermal strata in the impoundment, which are produced by the interaction of temperature, density, and wind during the different seasons of the year.

Because thermal stratification reflects the mass movement of water in a vertical direction, it results in vertical gradients of water quality as well as vertical gradients of water temperature. In virtually static impoundments, these gradients follow a characteristic seasonal pattern that is closely duplicated each year. In dynamic impoundments, such as power reservoirs, the effects of inflow or outflow may distort or destroy the normal temperature profiles at any time, so that the annual temperature cycle, in depth, is less subject to prediction. Thus, an understanding of the way water stratifies in deep storage reservoirs and a knowledge of the temperature variations in a particular reservoir are fundamental to optimum reservoir utilization.

PURPOSE AND SCOPE

As a pilot study to evaluate methods and equipment for observing water temperatures in deep storage impoundments, vertical temperature profiles were observed in Inland Lake (Blount County) at a selected point near the intake structure where normal depth exceeds 150 feet. These observations were begun in January 1959 and were continued at approximately monthly intervals until September 1959.

This preliminary study indicated that water-temperature information of considerable value could be obtained, and in the fall of 1959 the observations at Inland Lake were extended to include the entire reservoir. In addition, thermal surveys were begun at four other storage impoundments in north-central Alabama ranging in maximum depth from 40 to 90 feet. These impoundments were

the reservoir serving the City of Sylacauga (Talladega County) for water supply; two recreational lakes created by the State Department of Conservation, one in Walker County and the other in Tuscaloosa County; and Lay Lake, a hydroelectric power reservoir on Coosa River operated by the Alabama Power Company (figure 1). Thermal surveys at these impoundments were continued at intervals of about 6 weeks until September 1960, and hence embrace almost a complete annual temperature cycle.

The primary purpose of this report is to make available the information on water temperature collected at these five storage impoundments. Because information of this kind has not been collected widely in Alabama and may have uses that at present cannot be entirely foreseen, the data are presented in their entirety.

To supplement the basic data and to enhance their utility, the physical characteristics of the five reservoirs are summarized, the locations in each at which water temperatures were observed are identified, and the methods of making the observations are described. Some of the data are shown graphically in various forms to illustrate the mechanics of thermal stratification and to indicate the seasonal pattern of thermal behavior to be expected of these and other storage impoundments of similar characteristics in Alabama.

COOPERATION AND ACKNOWLEDGMENT

This report was prepared in the Tuscaloosa, Alabama, office of the U.S. Geological Survey, Surface Water Branch, under the direction of Lamar E. Carroon, District Engineer.

The report is a product of the cooperative efforts of the Alabama Water Improvement Commission, which assisted in providing funds for the thermal surveys and for the preparation of the report; the U.S. Geological Survey, which conducted the surveys and prepared the results for publication, and the Geological Survey of Alabama, which reproduced the report.

Grateful acknowledgment is made to the City of Sylacauga, the Birmingham Industrial Water Board, the Alabama Power Company, and the Alabama State Department of Conservation for their cooperation and assistance in making available for study the reservoirs under their control.

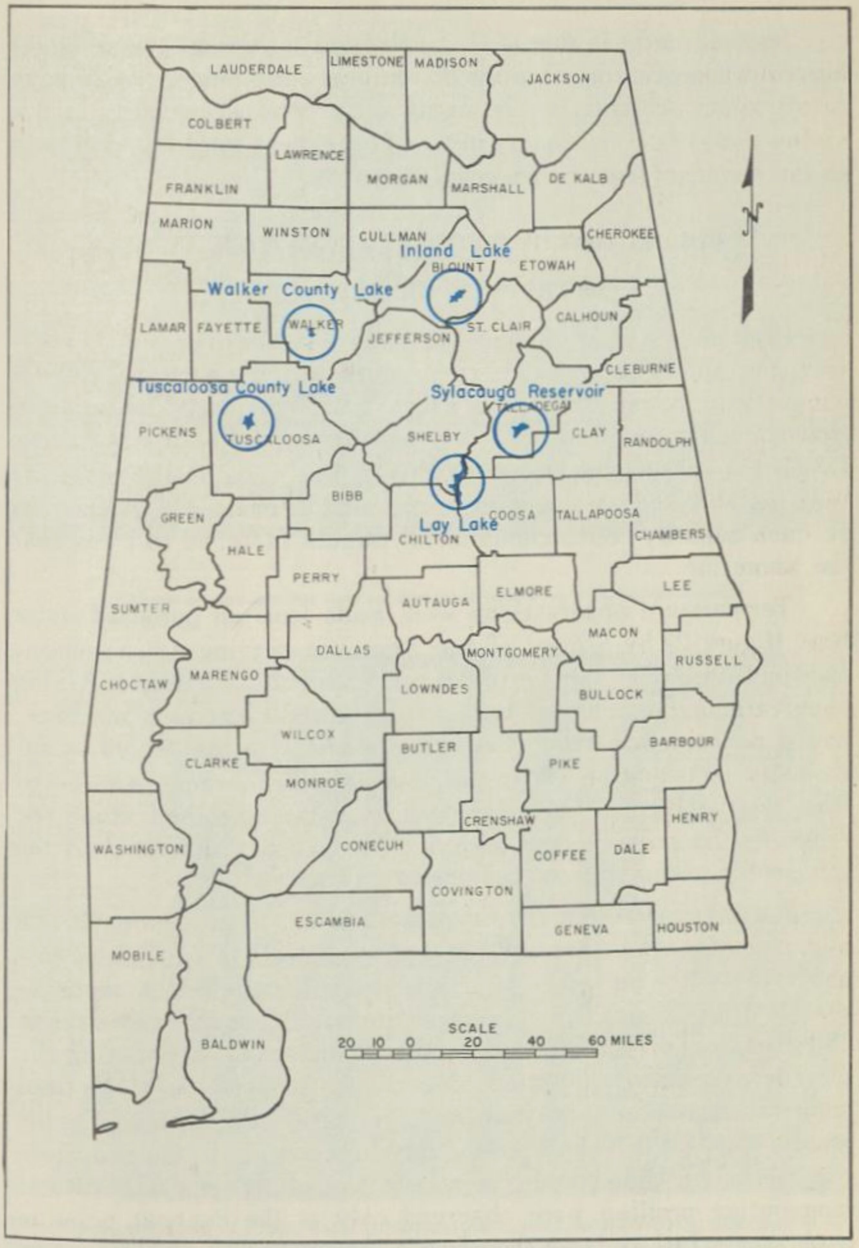


Figure 1.–Map of Alabama showing locations of reservoirs in which thermal surveys were made.

Special credit is due to C. L. Marshall of the U.S. Geological Survey, whose careful attention to the best interests of the surveys in all kinds of disagreeable weather and whose ingenuity in devising some of the necessary items of equipment contributed greatly to the successful performance of the work.

COLLECTION OF WATER-TEMPERATURE DATA

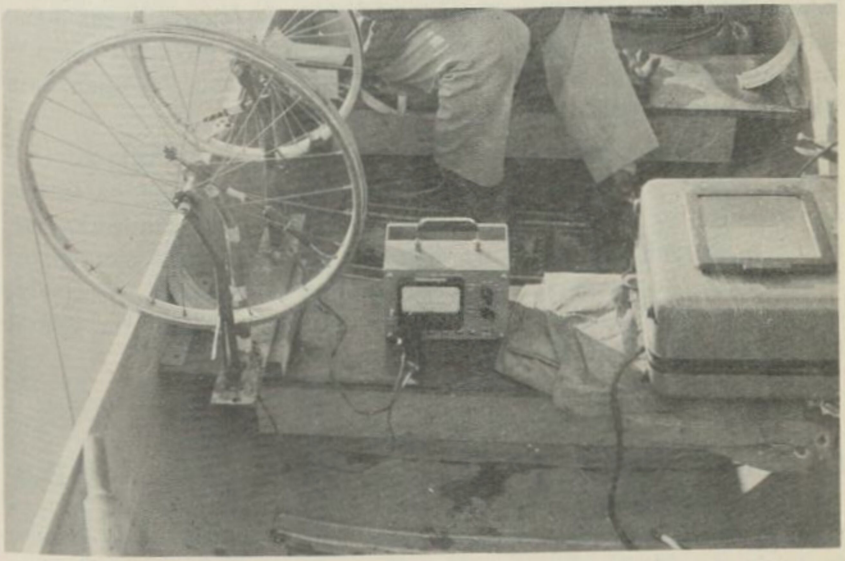
METHODS OF OBSERVATION

Preliminary to beginning the thermal surveys in each reservoir, the approximate locations of observation points considered adequate to define horizontal variations in water temperature throughout the length of the reservoir were noted on a map or aerial photographs of the reservoir. Range lines across the reservoir were established at these locations and permanently referenced on each bank by conspicuous metal targets fastened to trees near the shoreline.

Temperature observations were made from an outboard motor boat (figure 2) by a crew of two men, one serving as instrument man and observer, and the other as pilot and recorder. In taking observations, the boat was first placed on the range near one bank, and a passage was made along the range with the recording fathometer in operation. Maximum depth along the range was noted from the fathometer chart, and the boat was returned along the range to the point of maximum depth, as again indicated by the fathometer, where it was anchored.

Water temperatures were then determined to the nearest 0.1° F by means of a telethermometer at depth intervals of 2 feet from just under the water surface to a depth of 20 feet, at 5-foot depth intervals from 20 to 50 feet, and at 10-foot intervals thereafter to 150 feet, which was the full length of the cable connecting the thermistor sensing element. In depths less than 150 feet, the final observation was generally made 2 feet above the bottom. Depths greater than 150 feet (which were encountered only in the two deepest ranges of Inland Lake) were not probed. In general, vertical temperature profiles were observed only at the deepest point in each range. In Lay Lake, however, where greater turbulent mixing was anticipated, two additional profiles at approximate quarter points were obtained at each visit at ranges 1, 3, and 5 (see figure 7).

Winch and boom over bow for handling anchor and taking soundings.



Telethermometer (left) and fathometer (right) cables to temperature-sensing elements were provided with depth markings and were conveniently handled by reels improvised from bicycle wheels.

Figure 2.–Equipment used in thermal surveys.

Air temperature also was recorded before and after each series of water-temperature observations.

DESCRIPTIONS OF STORAGE IMPOUNDMENTS

The pattern of thermal behavior observed in one storage impoundment can logically be inferred to exist in another if it is known that all factors influencing that pattern have effects of essentially the same magnitude in both. Observation and inference suggest that the more influential factors governing the thermal behavior of lakes and reservoirs are air temperature and its daily and seasonal fluctuations; wind—its strength, duration, and direction; the physical aspects of the body of water, such as surface area, depth, shape, and orientation; and the rates, volume, and temperature of inflow and outflow. The first two of these factors, air temperature and wind, are climatological factors whose effects on water temperature can be expected to show little variation, geographically, over broad regions in Alabama. Hence, the patterns of thermal behavior defined by the data of this report can reasonably be extended to other storage impoundments in the same general region on the basis of a similarity in the physical aspects and the conditions of inflow and outflow of those impoundments with the ones investigated.

The five impoundments surveyed are described in this section of the report. For most of these, detailed information on inflow and outflow is not available. To a certain extent, however, the relative amounts of inflow at different impoundments can be inferred from the areas of the contributing watersheds. Similarly, the purpose served by the impoundment usually indicates the extent to which outflow is controlled.

INLAND LAKE

Location—Dam is on Blackburn Fork in sec. 8, 9, T. 14 S., R. 1 E., 9 miles southwest of Oneonta, Blount County.

Surface area—1,540 acres, approximately.

Drainage area—70.1 sq. mi.

Elevation—Spillway is 784 ft. above mean sea level. During period of thermal surveys, water surface ranged from 767.0 ft. to 783.5 ft.

Inflow and outflow—Inflow to the reservoir is not directly measured. Ordinarily, spilling occurs only during a few months in the winter and spring. Customer usage during the period of thermal surveys averaged 46.4 million gallons daily (72 cubic feet per second).

Use—Reservoir supplies water for domestic and industrial use by City of Birmingham.

Thermal surveys—Surveys were made from January 1959 to September 1960. The locations of the 11 observation ranges are shown on an outline map of the reservoir in figure 3. Cross sections along the ranges showing the point in each at which vertical temperature profiles were observed are given in figures 4, 5, and 6.

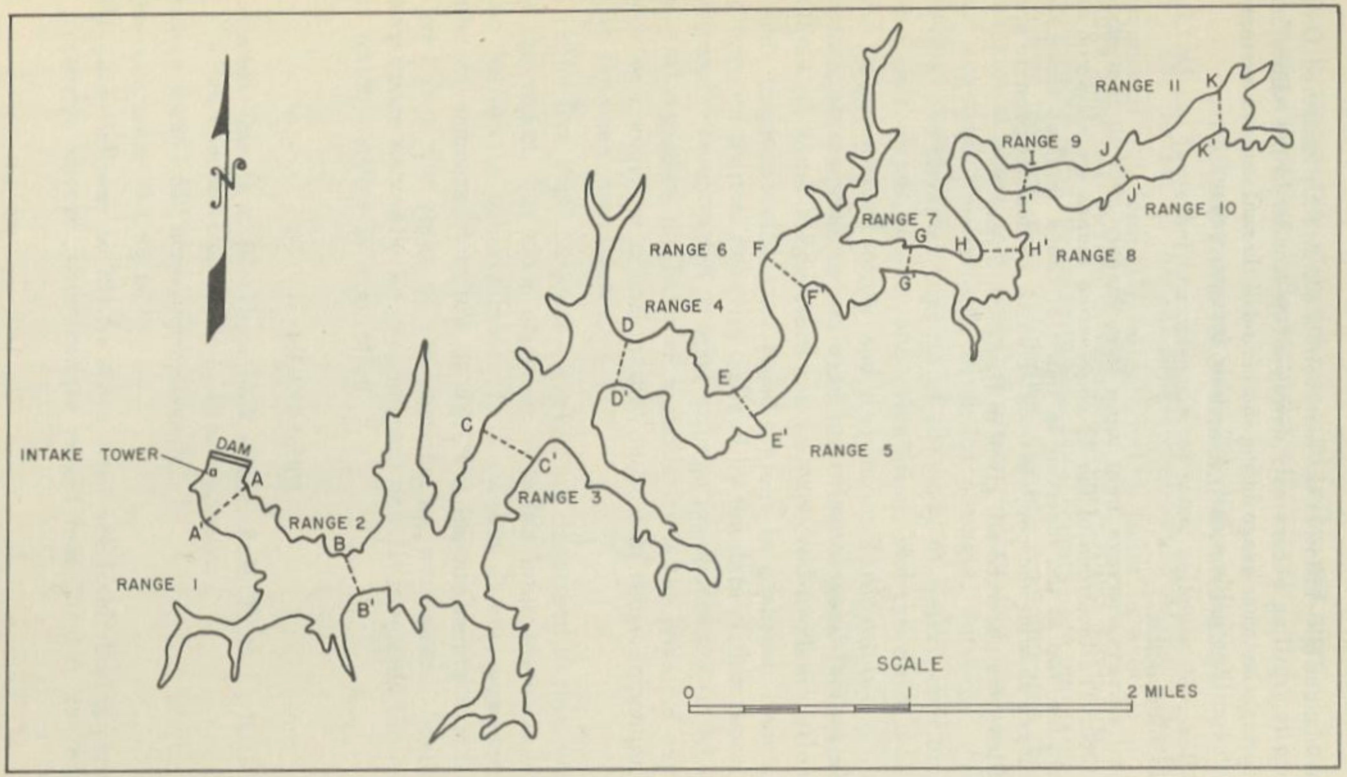


Figure 3.—Inland Lake showing locations of depth profiles and thermal surveys.

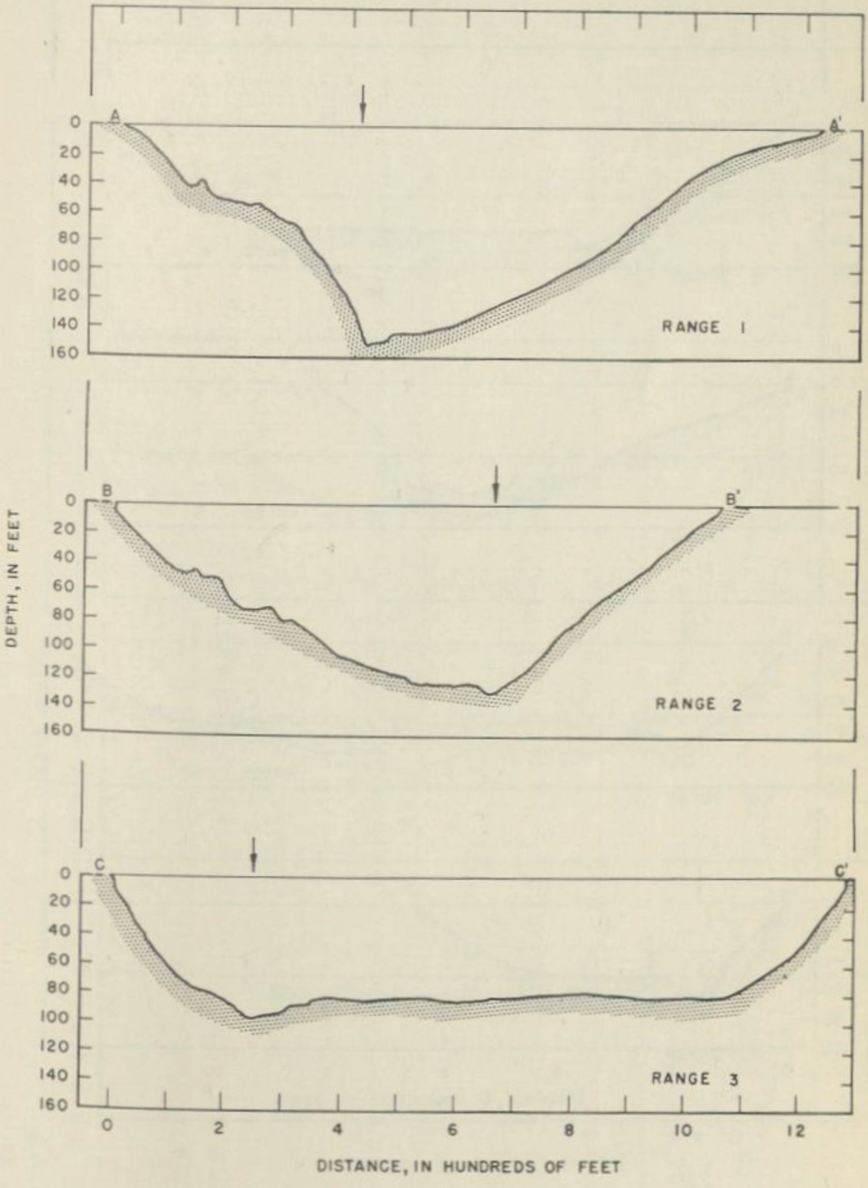


Figure 4.—Cross sections at observation ranges 1-3, Inland Lake.

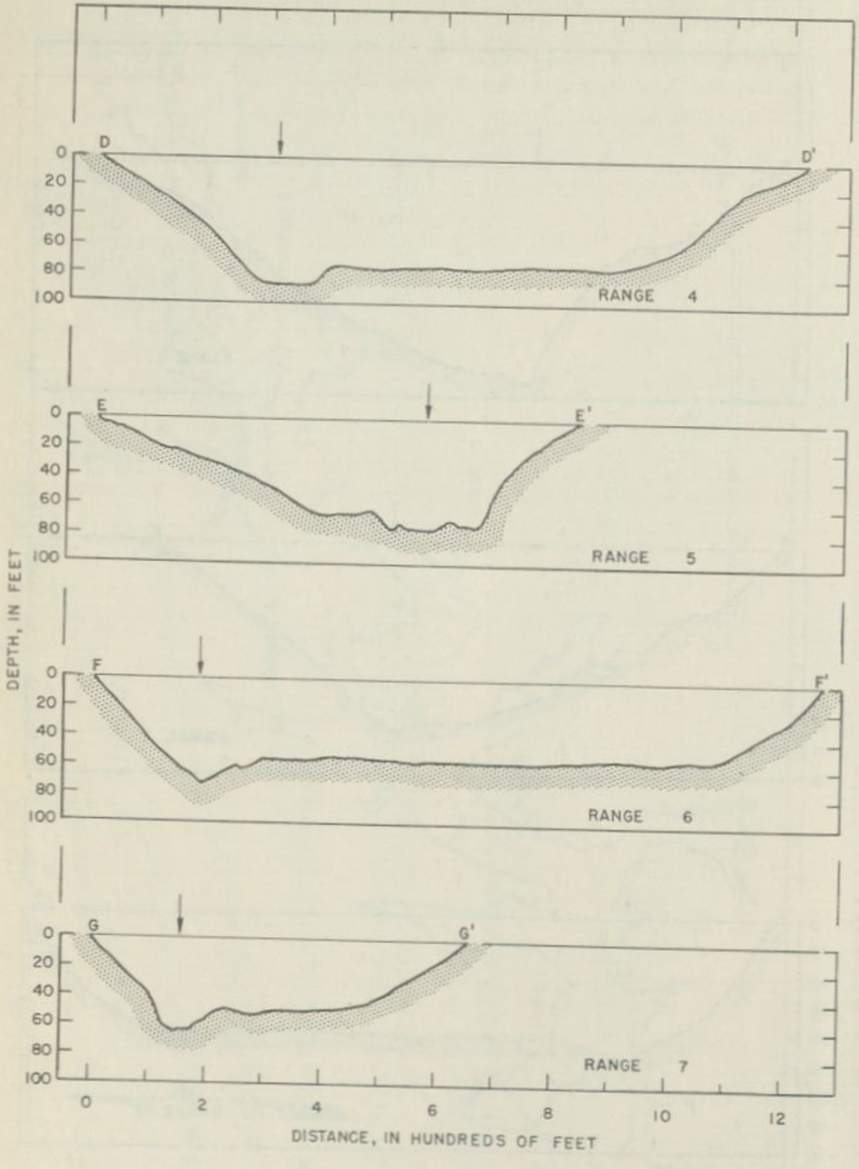


Figure 5.—Cross sections at observation ranges 4-7, Inland Lake.

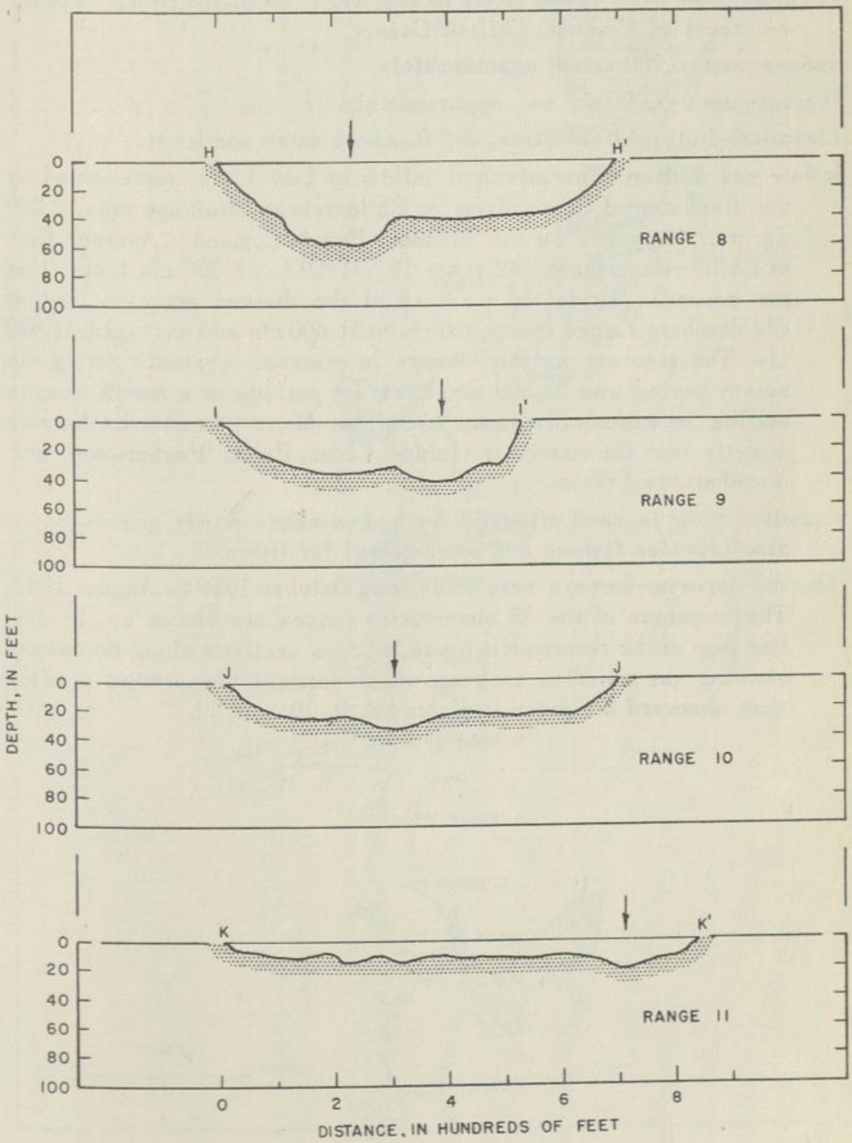


Figure 6.—Cross sections at observation ranges 8-11, Inland Lake.

LAY LAKE

Location—Dam is on Coosa River in sec. 24, T. 23 N., R. 15 E., 11 miles northeast of Clanton, Chilton County.

Surface area—6,700 acres, approximately.

Drainage area—9,090 sq. mi., approximately.

Elevation—Full pool elevation, 382 ft. above mean sea level.

Inflow and outflow—The principal inflow to Lay Lake, represented by the discharge of Coosa River at Childersburg (drainage area, 8,390 sq. mi.), is gaged by the Alabama Power Company. Average flow at Childersburg for the 42 years 1917-1959 is 13,500 cfs (cubic feet per second). During the period of the thermal surveys, flow at Childersburg ranged from 2,860 cfs to 51,600 cfs and averaged 11,630 cfs. The greatest monthly change in reservoir contents during the survey period was 20,300 acre-feet; for periods of a month or more outflow is essentially equal to inflow. Minor streams discharging directly into the reservoir include Cedar, Paint, Peckerwood, and Waxahatchee Creeks.

Use—Reservoir is used primarily for hydroelectric power generation; it also provides fishing and recreational facilities.

Thermal surveys—Surveys were made from October 1959 to August 1960. The locations of the 15 observation ranges are shown on the outline map of the reservoir in figure 7. Cross sections along the ranges showing the point in each at which vertical temperature profiles were observed are given in figures 8, 9, 10, and 11.

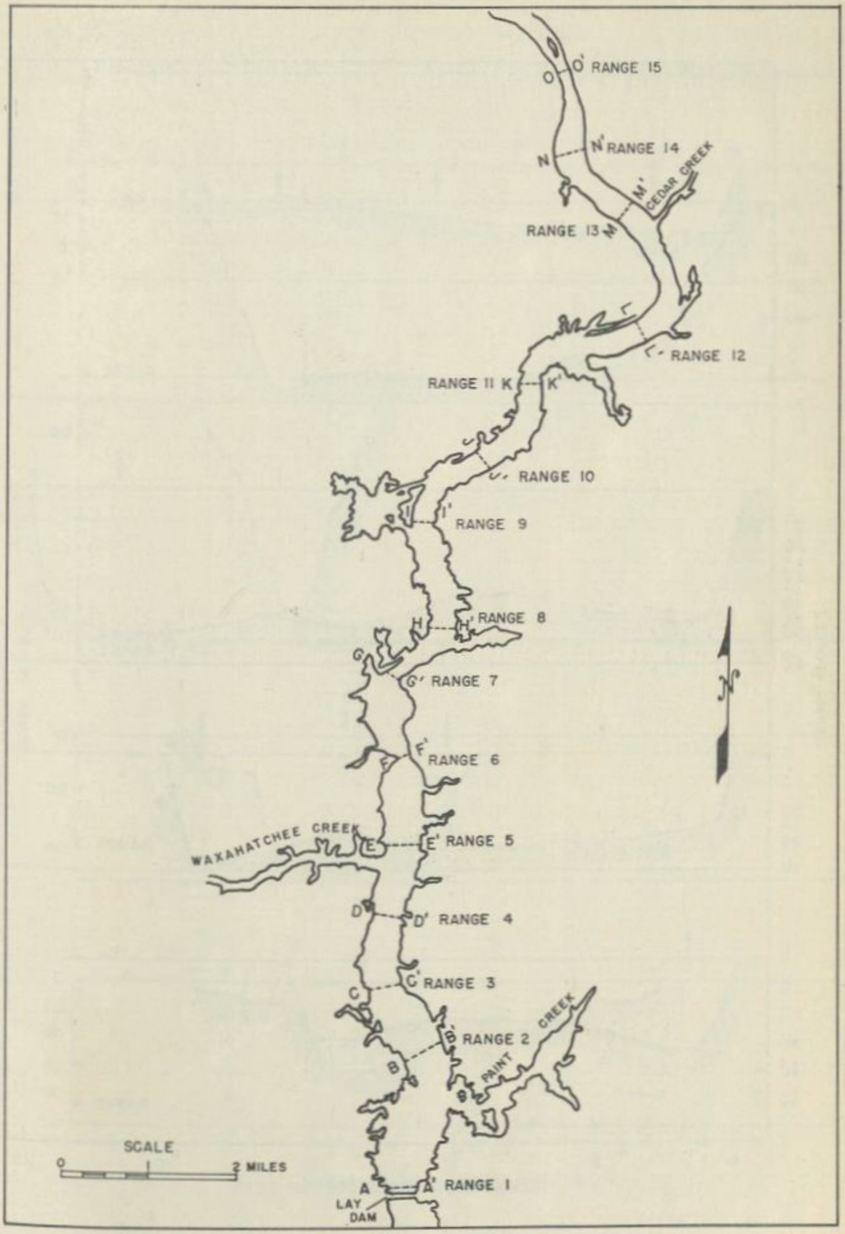


Figure 7.—Lay Lake showing locations of depth profiles and thermal surveys.

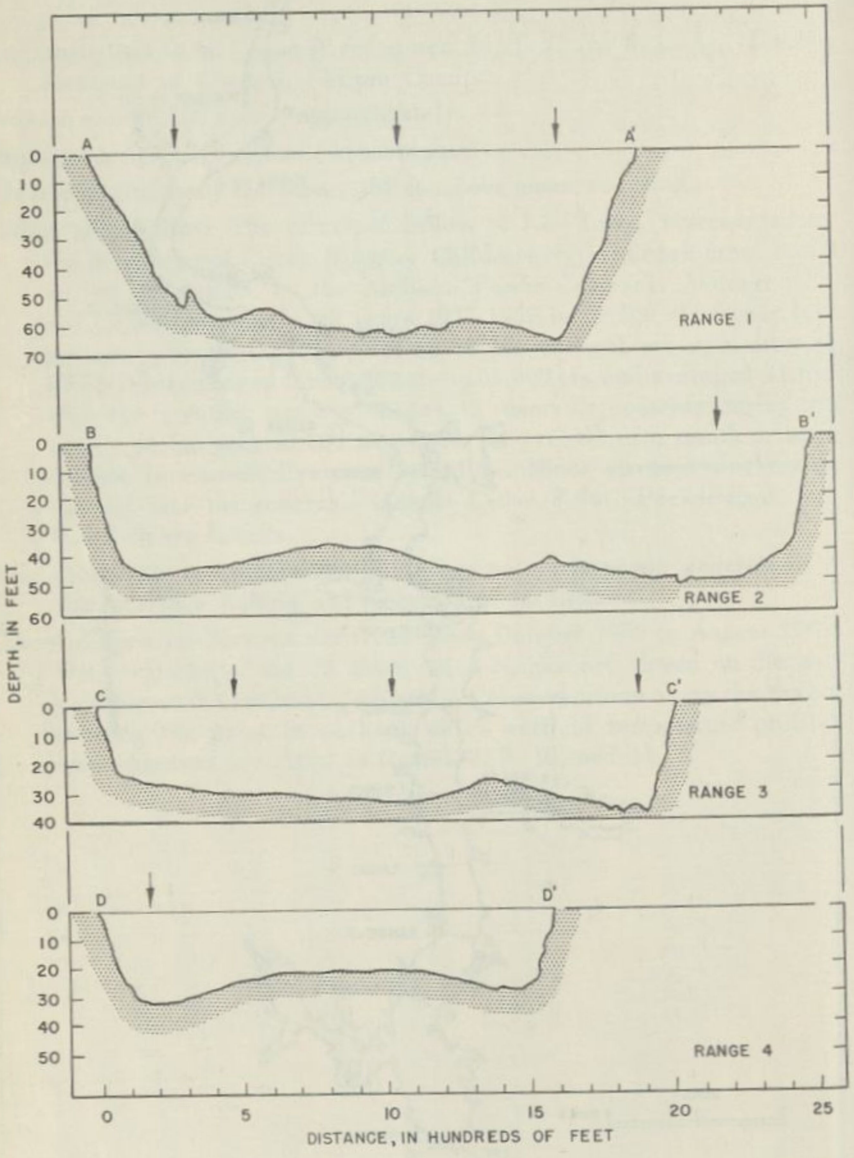


Figure 8.—Cross sections at observation ranges 1-4, Lay Lake.

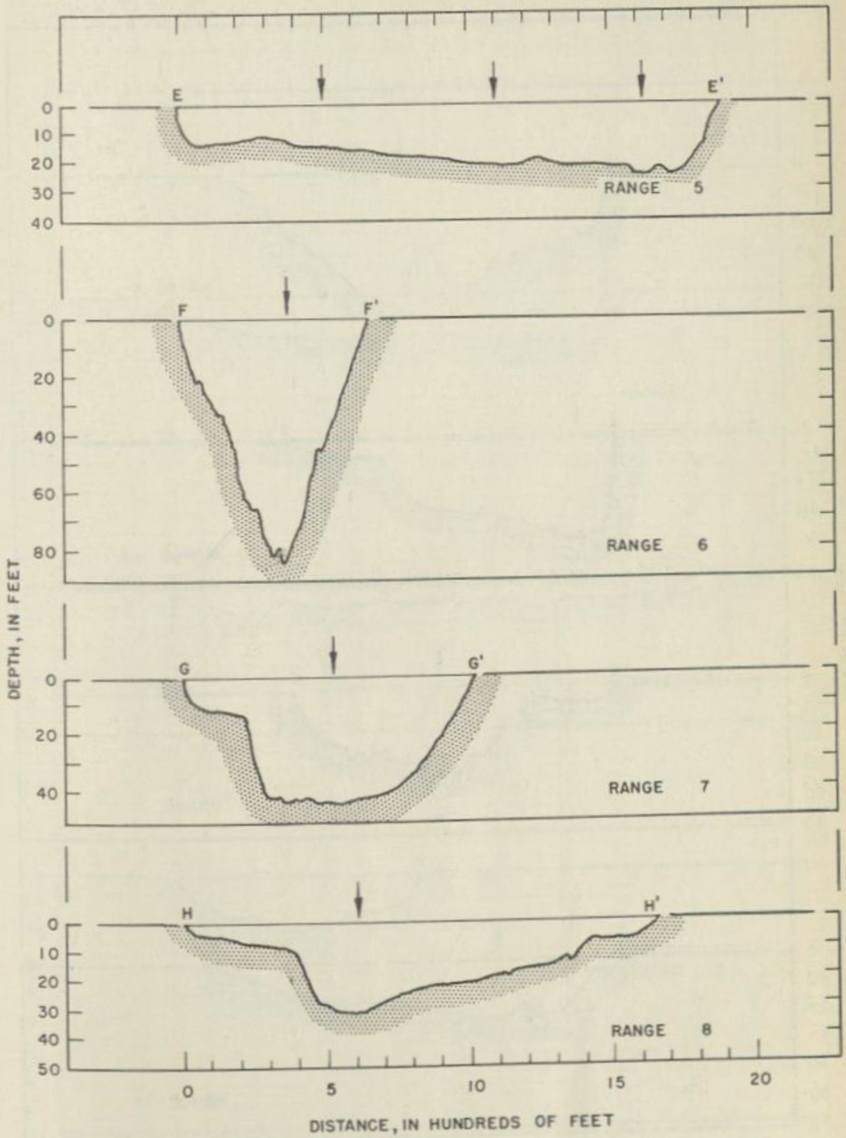


Figure 9.—Cross sections at observation ranges 5-8, Lay Lake.

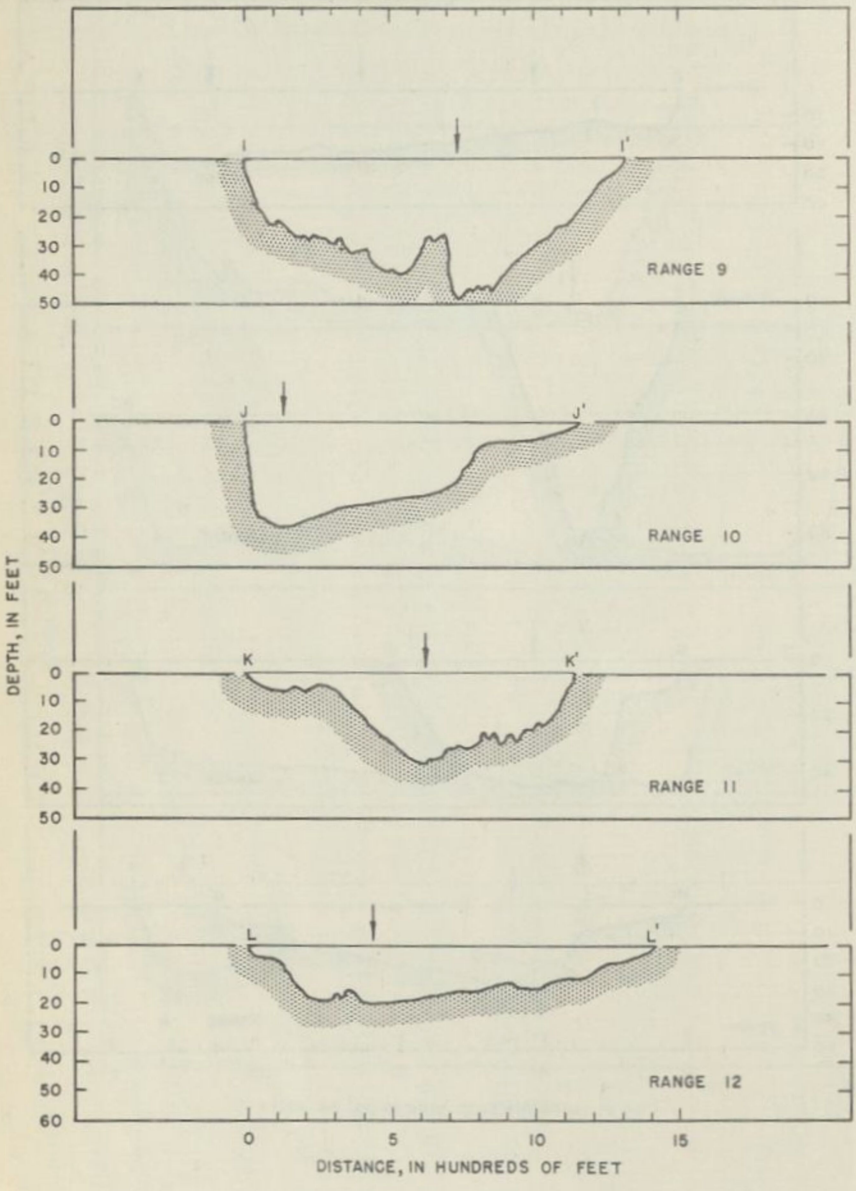


Figure 10.—Cross sections at observation ranges 9-12, Lay Lake.

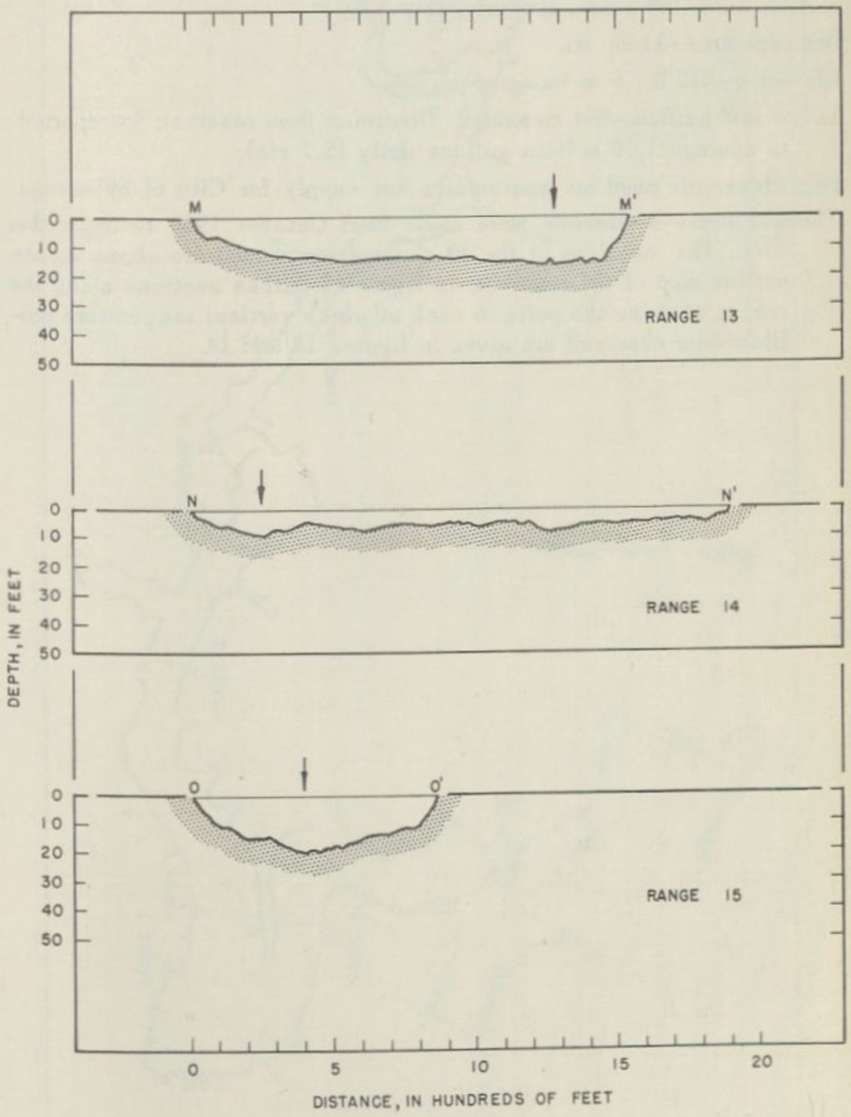


Figure 11.–Cross sections at observation ranges 13-15, Lay Lake.

SYLACAUGA RESERVOIR

Location—Dam is on Tallasseehatchee Creek in sec. 14, T. 21 S., R. 4 E., 4 miles northeast of Sylacauga, Talladega County.

Surface area—160 acres, approximately.

Drainage area—34 sq. mi.

Elevation—540 ft., from topographic map.

Inflow and outflow—Not measured. Diversion from reservoir is reported[1] to average 1.75 million gallons daily (2.7 cfs).

Use—Reservoir used as municipal water supply for City of Sylacauga.

Thermal surveys—Surveys were made from October 1959 to September 1960. The locations of the 10 observation ranges are shown on the outline map of the reservoir in figure 12. Cross sections along the ranges showing the point in each at which vertical temperature profiles were observed are given in figures 13 and 14.

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[1] Alabama State Department of Public Health, 1960: Public water supplies on record.

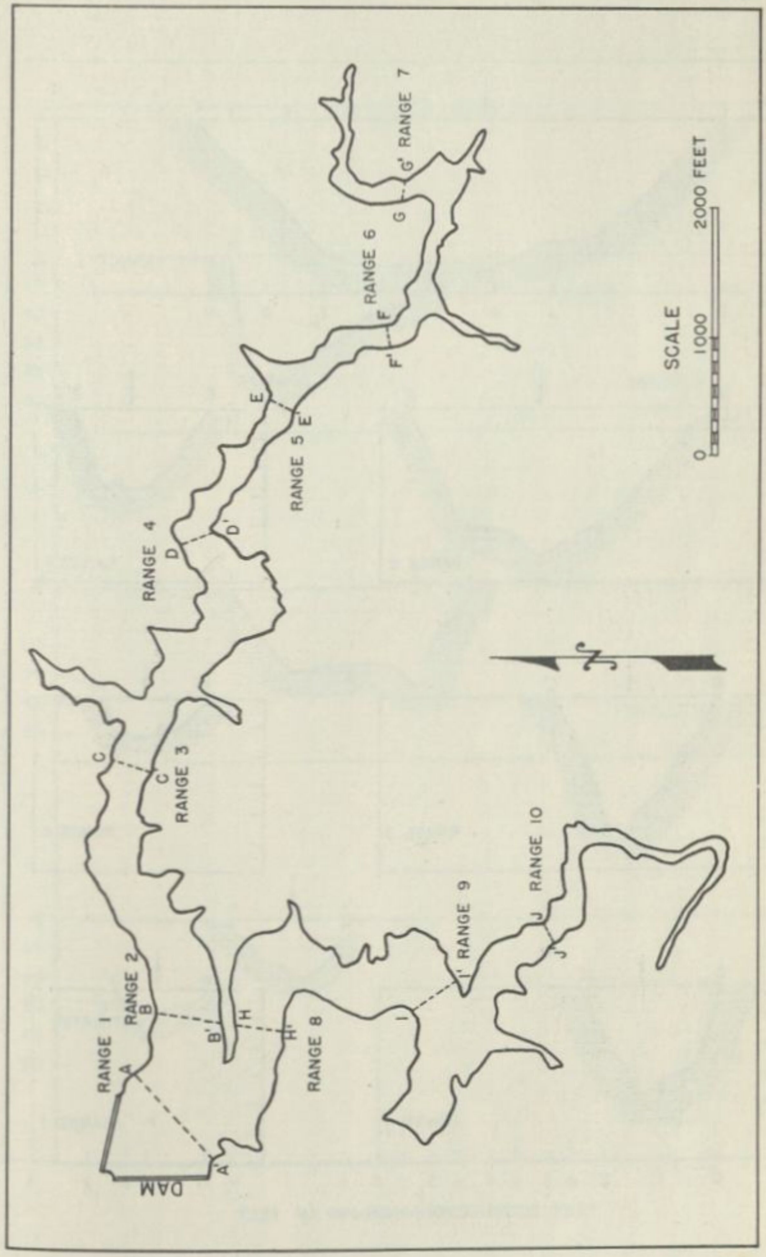

Figure 12.—Sylacauga Reservoir showing locations of depth profiles and thermal surveys.

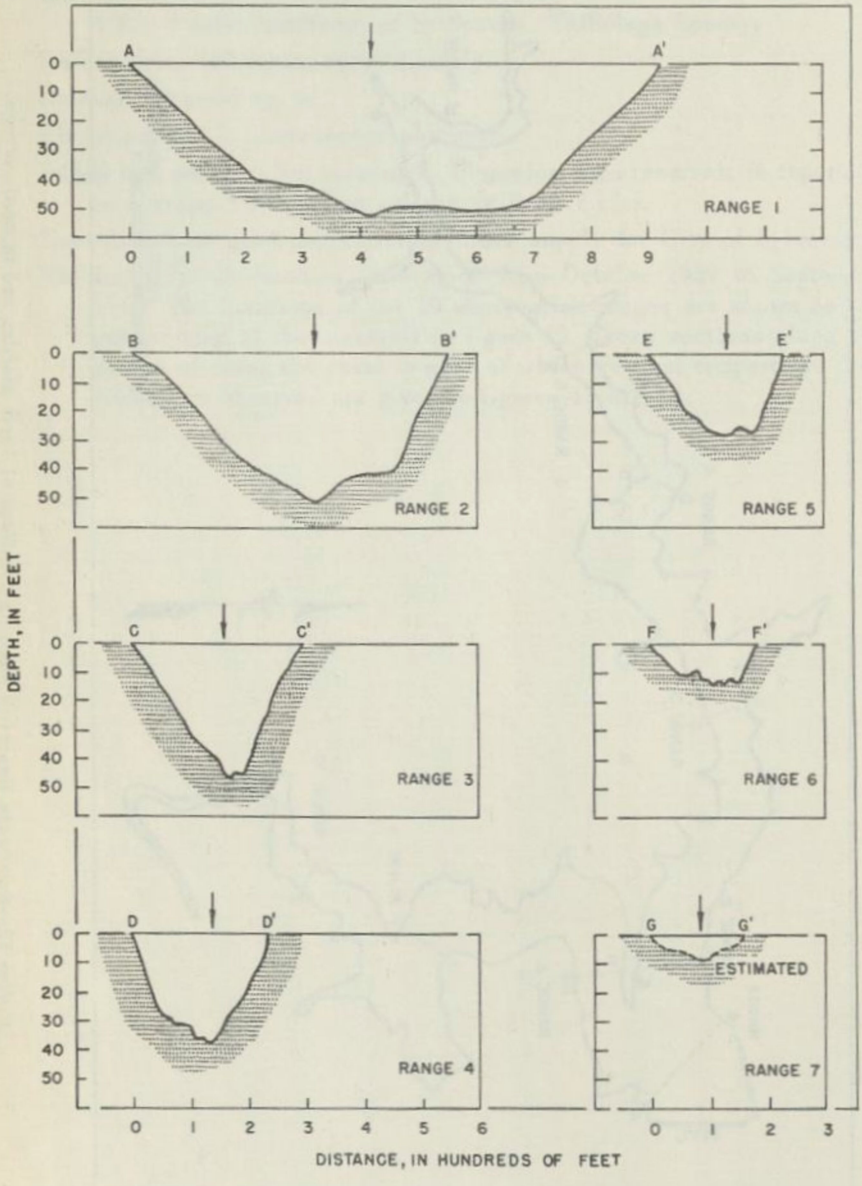

Figure 13.—Cross sections at observation ranges 1-7, Sylacauga Reservoir.

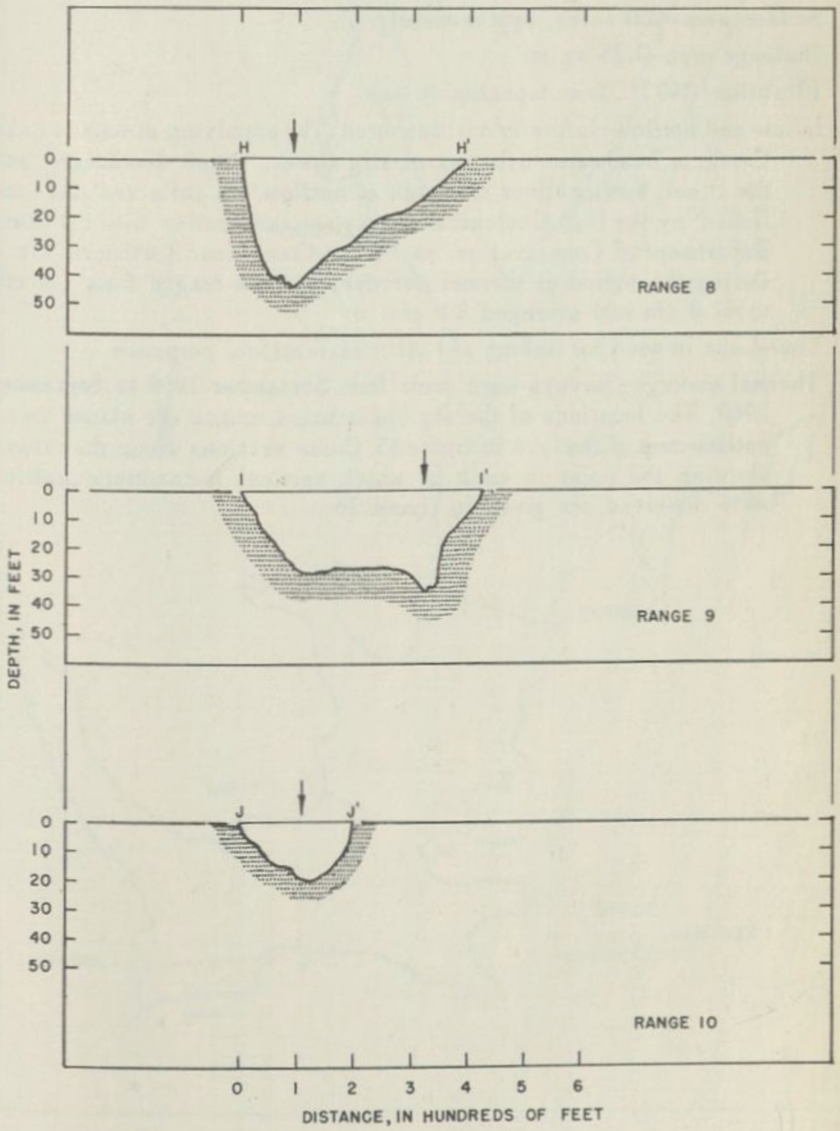

Figure 14.—Cross sections at observation ranges 8-10, Sylacauga Reservoir.

TUSCALOOSA COUNTY LAKE

Location—Dam is on Lake Creek in sec. 28, T. 20 S., R. 11 W., 9 miles northwest of Tuscaloosa, Tuscaloosa County.

Surface area—250 acres, approximately.

Drainage area—3.25 sq. mi.

Elevation—240 ft., from topographic map.

Inflow and outflow—Inflow is not measured. The supplying stream is Lake Creek, a headwater tributary of Big Creek, which discharges into the Black Warrior River. Records of outflow are collected and published[1] by the U.S. Geological Survey, in cooperation with the State Department of Conservation, as "Lake Creek near Northport, Ala." During the period of thermal surveys, outflow ranged from 1.4 cfs to 67.0 cfs and averaged 8.0 cfs.

Use—Lake is used for fishing and other recreational purposes.

Thermal surveys—Surveys were made from September 1959 to September 1960. The locations of the six observation ranges are shown on an outline map of the lake in figure 15. Cross sections along the ranges showing the point in each at which vertical temperature profiles were observed are given in figure 16.

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[1] U.S. Geological Survey Annual water supply paper, Surface water supply of the United States, Part 2B.

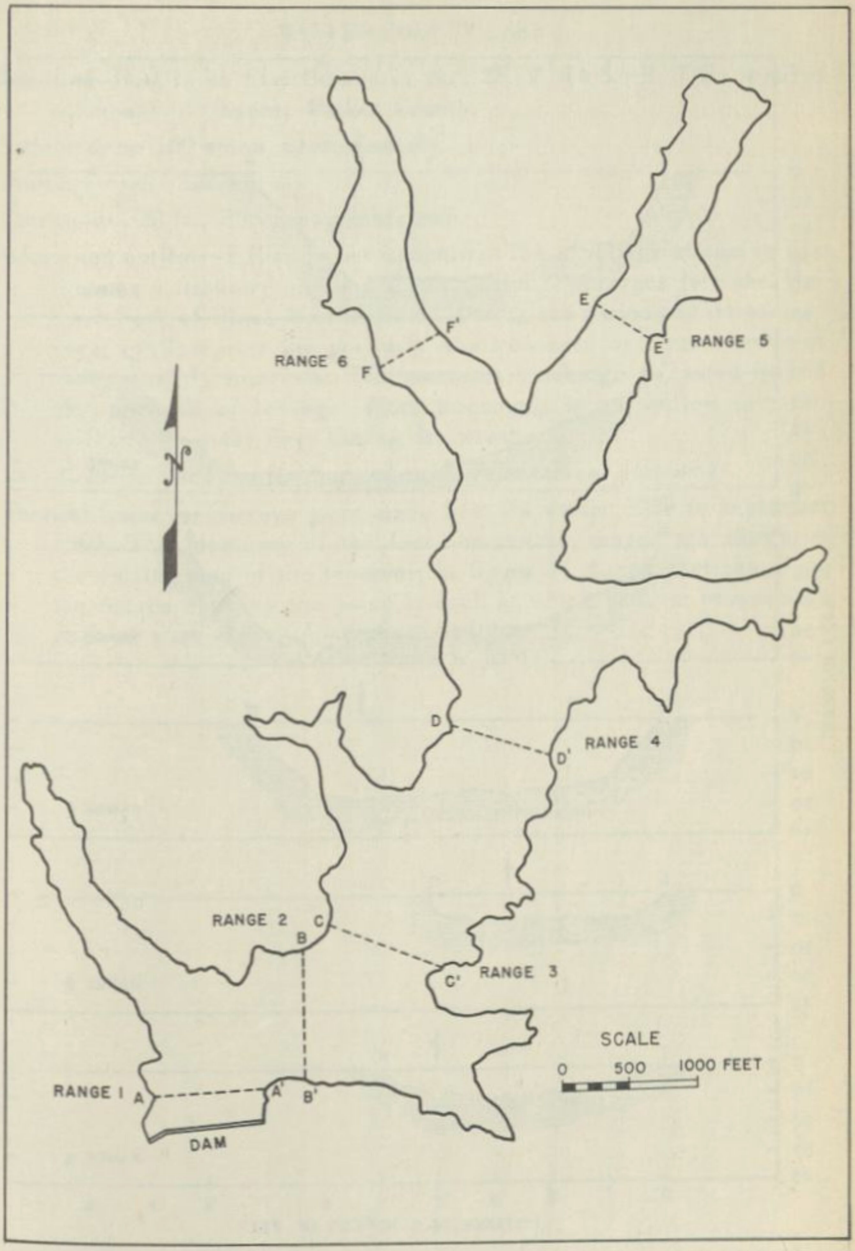

Figure 15.—Tuscaloosa County Lake showing locations of depth profiles and thermal surveys.

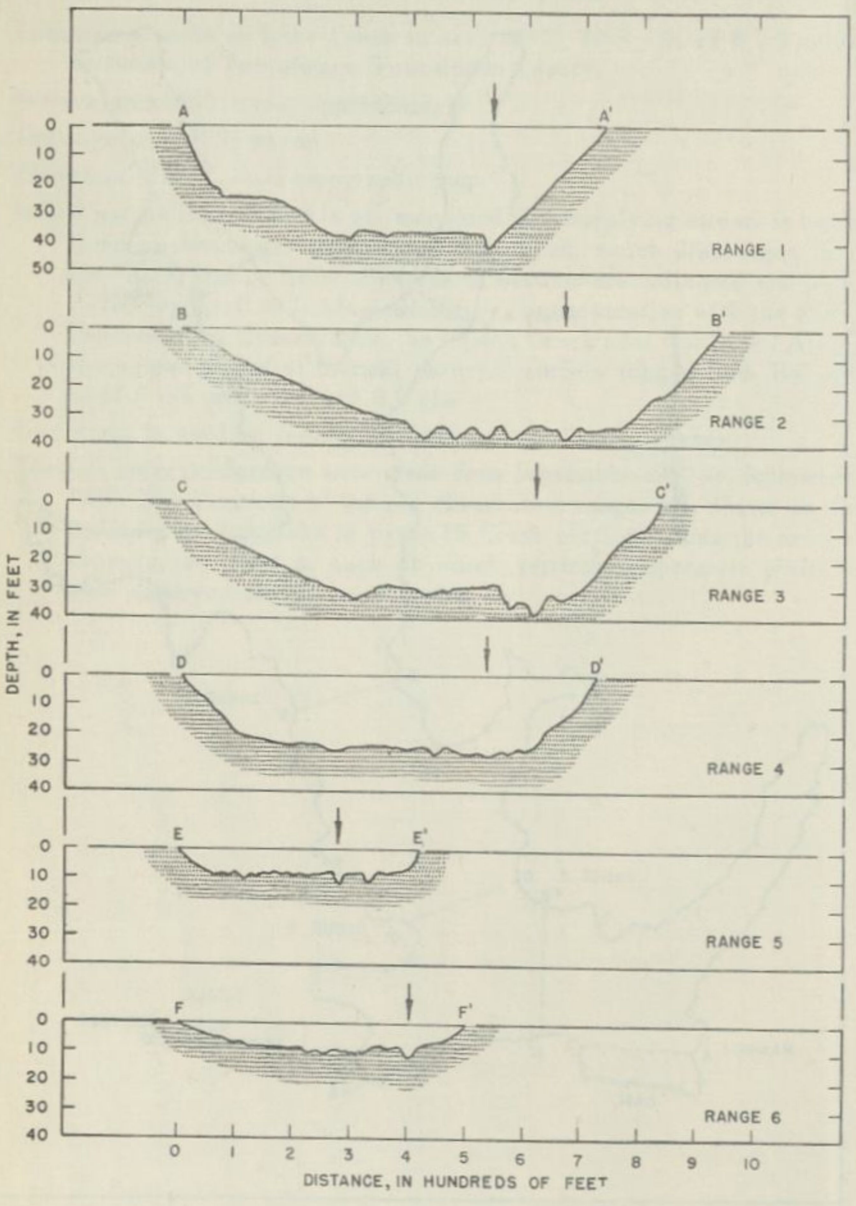

Figure 16.–Cross sections at observation ranges, Tuscaloosa County Lake.

WALKER COUNTY LAKE

Location—Dam is on Flat Branch in sec. 25, T. 14 S., R. 7 W., 4 miles southeast of Jasper, Walker County.

Surface area—160 acres, approximately.

Drainage area—2.35 sq. mi.

Elevation—320 ft., from topographic map.

Inflow and outflow—Inflow is not measured. The supplying stream is Flat Branch, a tributary of Cane Creek, which discharges into the Mulberry Fork of Black Warrior River. During the period of thermal surveys, outflow over the spillway was measured by current meter at about monthly intervals. The maximum discharge measured was 63 cfs; because of leakage, there frequently is no outflow over the spillway for many days during dry weather.

Use—Lake is used for fishing and other recreational purposes.

Thermal surveys—Surveys were made from November 1959 to September 1960. The locations of the four observation ranges are shown on the outline map of the reservoir in figure 17. Cross sections along the ranges showing the point in each at which vertical temperature profiles were observed are given in figure 18.

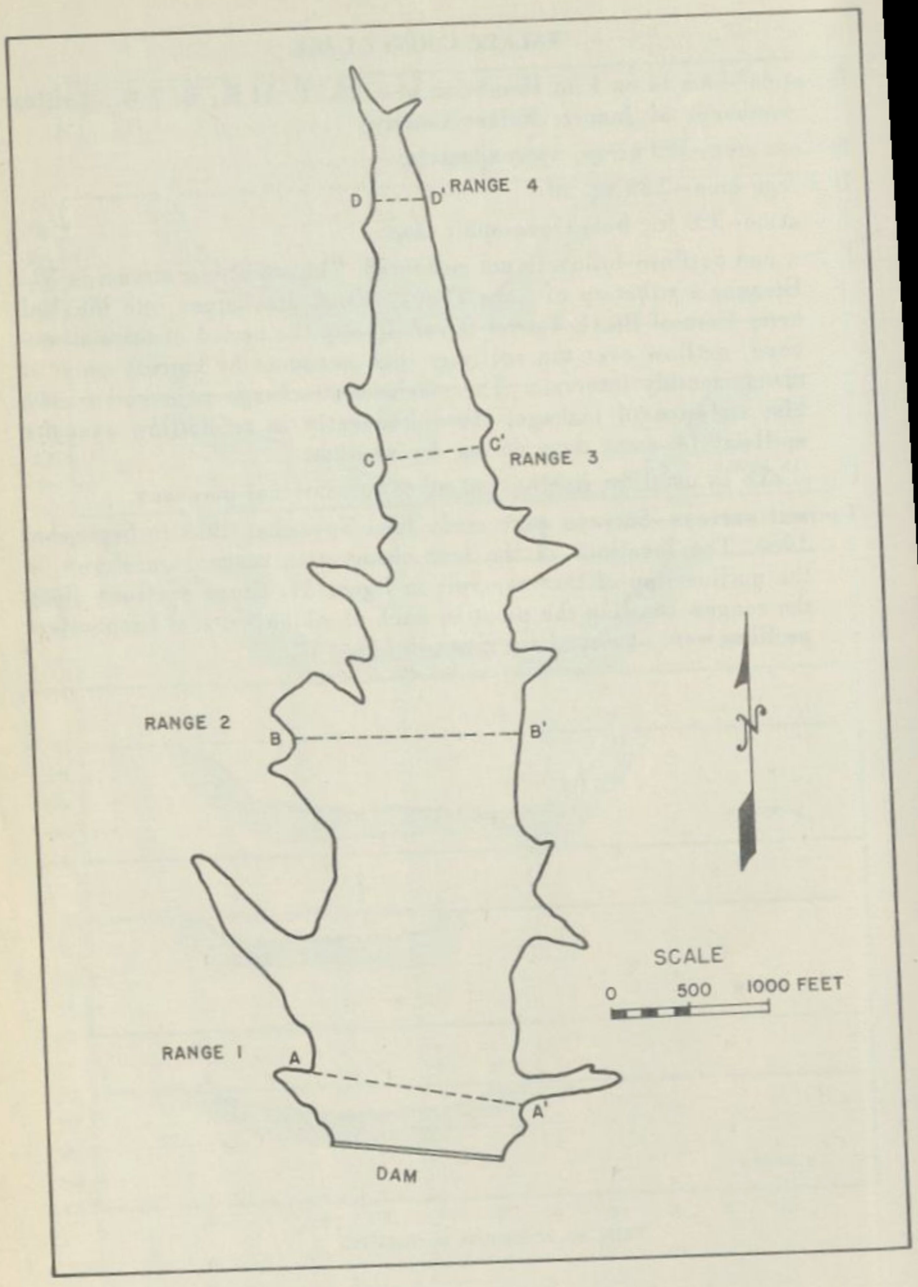

Figure 17.—Walker County Lake showing locations of depth profiles and thermal surveys.

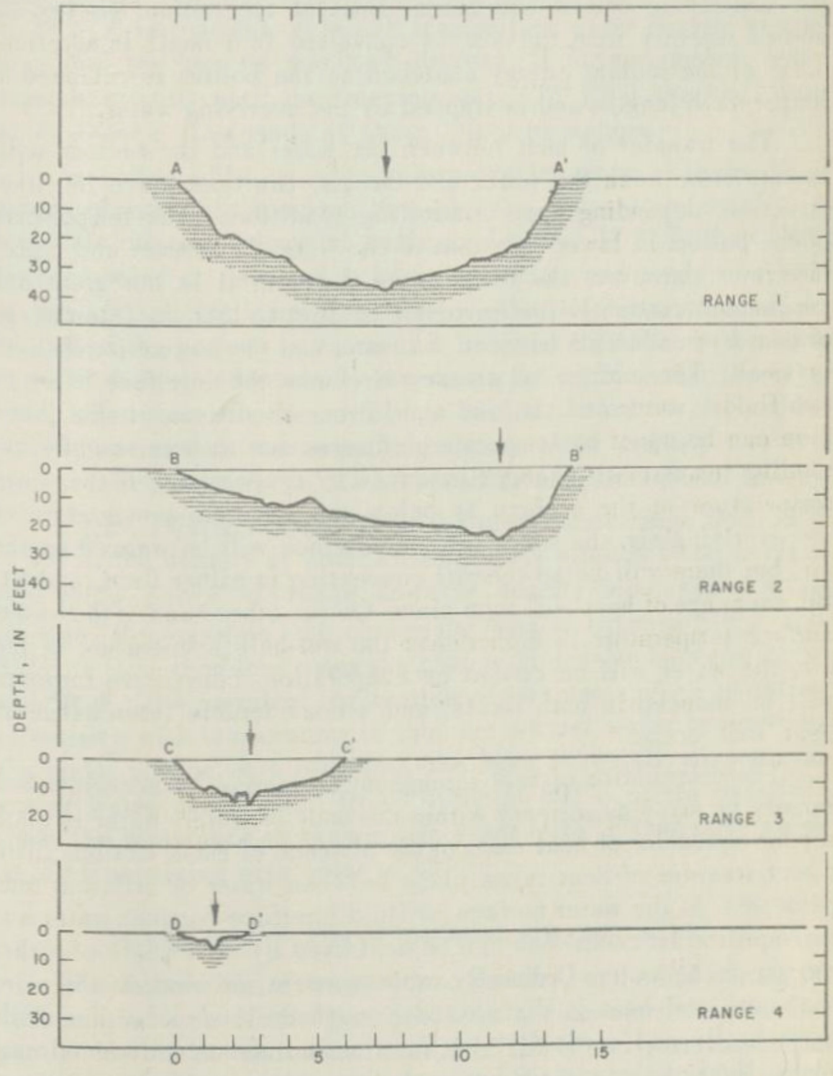

Figure 18.—Cross sections at observation ranges, Walker County Lake.

SEASONAL VARIATIONS IN RESERVOIR TEMPERATURE

HEATING OF LAKES AND RESERVOIRS

Lakes and reservoirs receive heat from the radiant energy of the sun and by transference from the overlying blanket of air and the underlying bottom sediments. Most of the radiant energy absorbed directly from the sun is converted into heat. In addition, some of the radiant energy absorbed by the bottom is released at longer wave lengths and is trapped by the overlying water.

The transfer of heat between the water and the bottom sediments, or between the water and the air, can take place in either direction, depending upon controlling conditions. The temperature of the bottom is lower than that of the water in summer and higher in winter; however, the temperature differential is not great and the thermal conductivities involved are low, so that the interchange of heat by conduction between the water and the bottom is relatively small. The surface of a reservoir forms the interface between two fluids, water and air, and equilibrium conditions at this interface can be upset by temperature changes due to heat transfer, including temperature changes produced by evaporation. If the water temperature at the surface is below the wet-bulb temperature of the overlying air, the water near the surface will be warmed by the air; but there will be no thermal convection in either fluid, and little exchange of heat will take place. On the other hand, if the water-surface temperature is higher than the wet-bulb temperature of the air, the water will be cooled by evaporation, convective currents will be induced in both fluids, and a considerable interchange of heat will occur.

The distribution of heat throughout a reservoir is accomplished largely by mass movements within the body of water. Water is such a poor conductor of heat that, in the absence of mass motion, little direct transfer of heat takes place between water of different temperatures. At the water surface, or fluid interface between water and air, equilibrium conditions can be destroyed by movements of either the air or the water. Ordinarily, air movement, or wind, is the more vigorous, and heat is distributed through the body of water, both horizontally and vertically, by wave action and wind-induced currents. Most of the mixing, however, that occurs in large, quiescent bodies of water results from vertical mass movements induced by thermal action.

MECHANICS OF THERMAL STRATIFICATION

The thermal stratification that develops in deep, tranquil lakes or reservoirs during the warmer season of the year is largely the result of the temperature-density relationship of water. Like most substances, water contracts when cooled—until a temperature of 39.2° F is reached, at which temperature water ceases to contract and reaches its maximum density. If further cooled, water expands slightly until the freezing point (32° F) is reached. When water freezes, it expands by about 1/8 of its volume.

As indicated by the temperature-density graph of figure 19, if a body of water has reached, throughout, a temperature equal to or less than the temperature of maximum density, 39.2° F, then water further cooled at the surface becomes lighter and tends to remain at the surface until freezing occurs. Also, if water at or above 39.2° F at the surface is warmed, it becomes lighter than the cooler water below and tends to remain at the surface. On the other hand, when water at the surface is cooled toward 39.2° F, it becomes heavier than the underlying warmer water and tends to sink until it reaches a stratum of corresponding temperature and density.

Figure 19 also shows that in the temperature range from 32° F to 45° F, the density of water deviates only slightly from its maximum value. Above this range, however, density decreases at a faster rate. For example, the change in density between 80° F and 85° F is more than four times the change in density between 45° F and 50° F. The practical implication of this non-uniform variation of density with temperature is that the warmer water becomes in the upper portion of a reservoir, the more it resists mixing with cooler water underneath. Thus, water at 85° F offers over four times the resistance to mixing with water at 80°F than does water at 50° F to mixing with water at 45° F.

SEASONAL PATTERN OF THERMAL STRATIFICATION

The interaction of temperature, density, and wind during the different seasons of the year produces a characteristic seasonal pattern for the thermal stratification of lakes and reservoirs. The typical pattern occurring in lakes or other relatively quiescent bodies of water in the middle latitudes of the temperate zone has

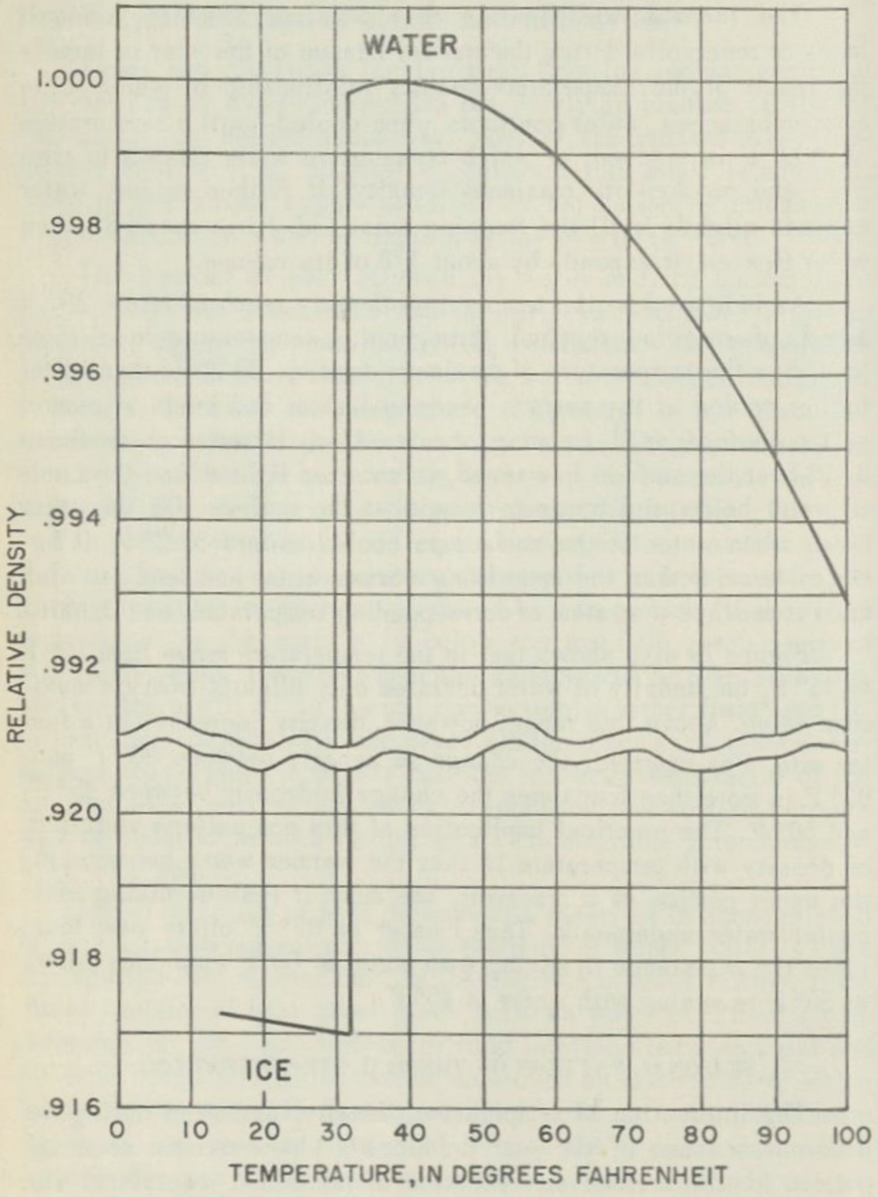

Figure 19.—Water temperature-density relation.

been described by Fair and Geyer (1954) and is illustrated in idealized form by figure 20, which shows four characteristic temperature profiles during the annual cycle.

During winter, when a lake or reservoir is frozen completely over, water temperature ranges from near the freezing point just under the ice to about that of maximum density at the bottom. A condition of inverse thermal stratification therefore exists, with the colder and lighter water nearer the surface. Although thermal resistance to mixing is quite small in the temperature range 32.0°-39.2° F, the ice cover prevents disturbance by wind, and no significant vertical movements of the water take place. For this reason, this condition is sometimes referred to as "winter stagnation" (fig. 20).

With the breakup of the ice in the spring, water near the surface is warmed. As it approaches the temperature of maximum density (39.2° F), it becomes heavier and tends to sink, thereby gradually reducing the inverse temperature gradient that existed in the upper part of the reservoir during the period of ice cover. Eventually, the temperature gradient is completely destroyed and the water from surface to bottom is of essentially uniform temperature near 39.2° F. With uniform temperature and density throughout, the water body is in a condition of unstable equilibrium, and vertical currents are readily induced by daily fluctuations in water temperature near the surface, aided by wind disturbance. During this period of free circulation—sometimes called the "spring overturning" (fig. 20)—the water warms uniformly throughout its depth to a temperature of 45° to 50° F—that is, over the range of temperature in which the variation of density is fairly small.

As the season moves into summer, water near the surface is further warmed, and its resistance to mixing with colder and heavier water underneath becomes increasingly greater. As resistance to mixing increases, the depth of vertical circulation is reduced until finally a pronounced thermal gradient is built up, which prevents vertical circulation altogether, except in the upper part of the reservoir. This condition is represented by the profile labeled "summer stagnation" (fig. 20). Thermal stratification reaches its fullest development during this period. Normally, three distinct

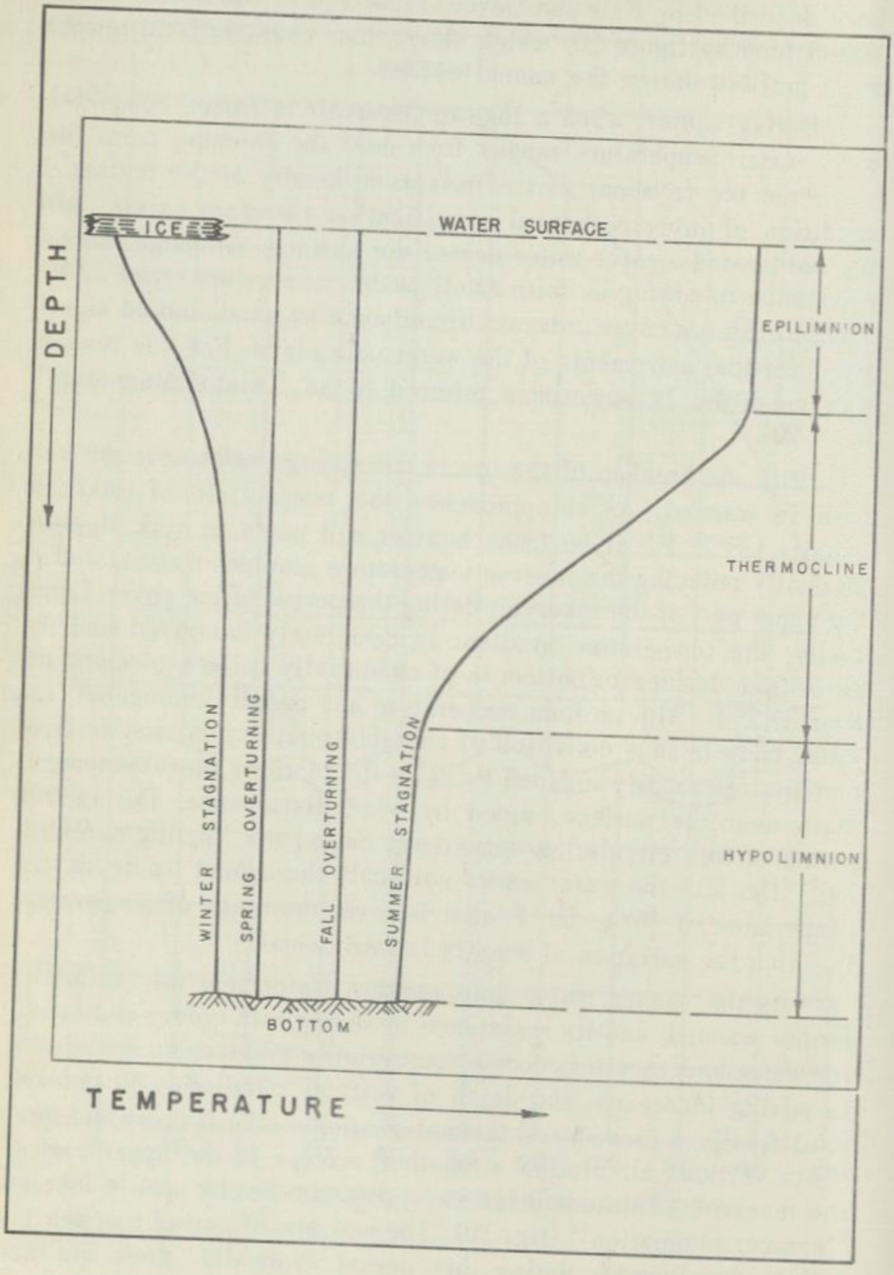

Figure 20.—Idealized diagram of annual cycle of thermal stratification.

thermal zones can be differentiated. These are the epilimnion, or upper zone of relatively uniform temperature and density in which vertical and horizontal mixing continues to take place; the thermocline or mesolimnion, an intermediate zone having a steep vertical temperature gradient; and the hypolimnion, or lower zone of stagnation where hardly any water movement occurs, either vertically or horizontally.

With the approach of autumn, the predominating influence is a cooling of water near the surface, especially at night. The cooler and heavier water tends to sink through the epilimnion to a stratum in the thermocline of similar temperature and density. This circulation within the epilimnion reduces the temperature of the epilimnion and causes it to extend deeper into the thermocline. As the weather grows colder, the epilimnion progressively encroaches upon the thermocline until, finally, the thermocline is obliterated, and the epilimnion extends from surface to bottom. The condition now reached is that represented in figure 20 by the temperature profile labeled "fall overturning." It is so called because water temperature and density are again substantially uniform from surface to bottom, equilibrium is unstable, and circulatory currents within the water body are easily induced by wind action or by convection.

This unstable condition continues with the return of winter, and the water body becomes progressively cooler, while maintaining a nearly vertical temperature gradient, until freezing occurs and the condition of winter stagnation is again established.

In Alabama, where subfreezing temperatures ordinarily are not persistent enough to form complete or enduring ice cover on large bodies of water, the conditions described as winter stagnation and spring overturning normally do not occur. Instead, the period of fall overturning can be regarded as extending through the winter and spring.

EFFECTS OF INFLOW, OUTFLOW, AND WIND

The ideal pattern of thermal stratification described above, though typical of deep, quiescent lakes or impoundments, may be greatly modified by disturbing influences associated with unseasonable weather, inflow, outflow, and unusually prolonged or violent wind.

The effects of inflow on the thermal stratification of a reservoir vary widely depending upon the initial temperature distribution in the reservoir and the rate, volume, and temperature of inflow. In reservoirs having a low storage ratio—that is, reservoirs whose storage capacity is small in comparison with the average annual rate of inflow—a condition of thermal stratification may be completely obliterated by inflowing floodwaters through the process of turbulent mixing and replacement of the water initially in the reservoir by water of a different temperature. On the other hand, with more moderate rates of inflow, incoming water may pass through the reservoir at some discrete level as a density current, with little effect upon the thermal distribution at other levels. For example (Fry, Churchill, Elder, 1953), in the autumn, water in the supplying stream may be cooled more quickly than the great mass of water pooled in the reservoir, with the result that inflow ceases to enter the upper levels of the reservoir and begins to flow under the pooled water, perhaps in the original river channel. When this occurs, complete vertical circulation in the reservoir may be inhibited until the overlying pooled water cools to the temperature of the underflow.

When outflow from a reservoir is confined to spillways of the overflow type, the outflow is largely withdrawn from the upper levels of the reservoir. During the warming season, inflow tends to pass through the reservoir to the spillway as an upper-level density current. During the cooling season, inflow tends to seek the lower levels of the reservoir, thereby displacing the warmer water near the surface. In either case, therefore, the overflow spillway usually discharges the warmest water in the reservoir. On the other hand, when outflow is through intakes located deep in the reservoir, the colder water is discharged first. Heavy drafts from the depths of a small reservoir may exhaust the supply of cold water rather quickly, with a consequent distortion of the normal temperature profiles.

As previously mentioned, wind is an important agent furthering the mixing of water in reservoirs. In addition to vertical wave motion, wind produces horizontal circulating currents when its direction is such that it can act over long fetches in the reservoir. The water that is driven to the windward shore builds up a hydraulic

head which generates return currents below the surface. The depth of these counter currents depends partly upon the topography of the shore, but more so upon the steepness of the thermal gradient in the reservoir. The steeper the gradient, the more closely are the counter currents confined to the upper levels of the reservoir.

The effects of violent wind mixing on a thermally stratified reservoir have been described by Lee (1961). In this instance, a tropical hurricane with wind velocities of 45 miles per hour and higher passed over a reservoir (Lake Wylie on Catawba River, S.C.) a few hours after a thermal survey of the reservoir had been made. This survey had found the reservoir, which was 60 feet deep, to be weakly stratified with a temperature difference of about 3° F between surface and bottom. Another survey closely following the storm found that the temperature gradient had been destroyed and that the temperature of the entire water mass was approximately the average of the temperatures at the surface and at the bottom before the storm. A similar averaging of other parameters surveyed before and after the storm—dissolved oxygen, pH, and turbidity—was also observed.

RESULTS OF THERMAL SURVEYS

In the light of the foregoing background material it is interesting, now, to examine the results of the thermal surveys of the five impoundments in north-central Alabama. Except for Lay Lake, these impoundments are substantially of the static type, in that inflow and outflow do not greatly affect their thermal behavior.

INLAND LAKE

Inland Lake, also referred to sometimes as Blackburn Lake, was completed in 1938. It is formed by an earth and rockfill dam rising 190 feet above the streambed and is the deepest of the five reservoirs surveyed.

The seasonal pattern of thermal behavior in Inland Lake is illustrated by figure 21, in which are plotted five of the nine vertical temperature profiles observed at range 2. (The four profiles not

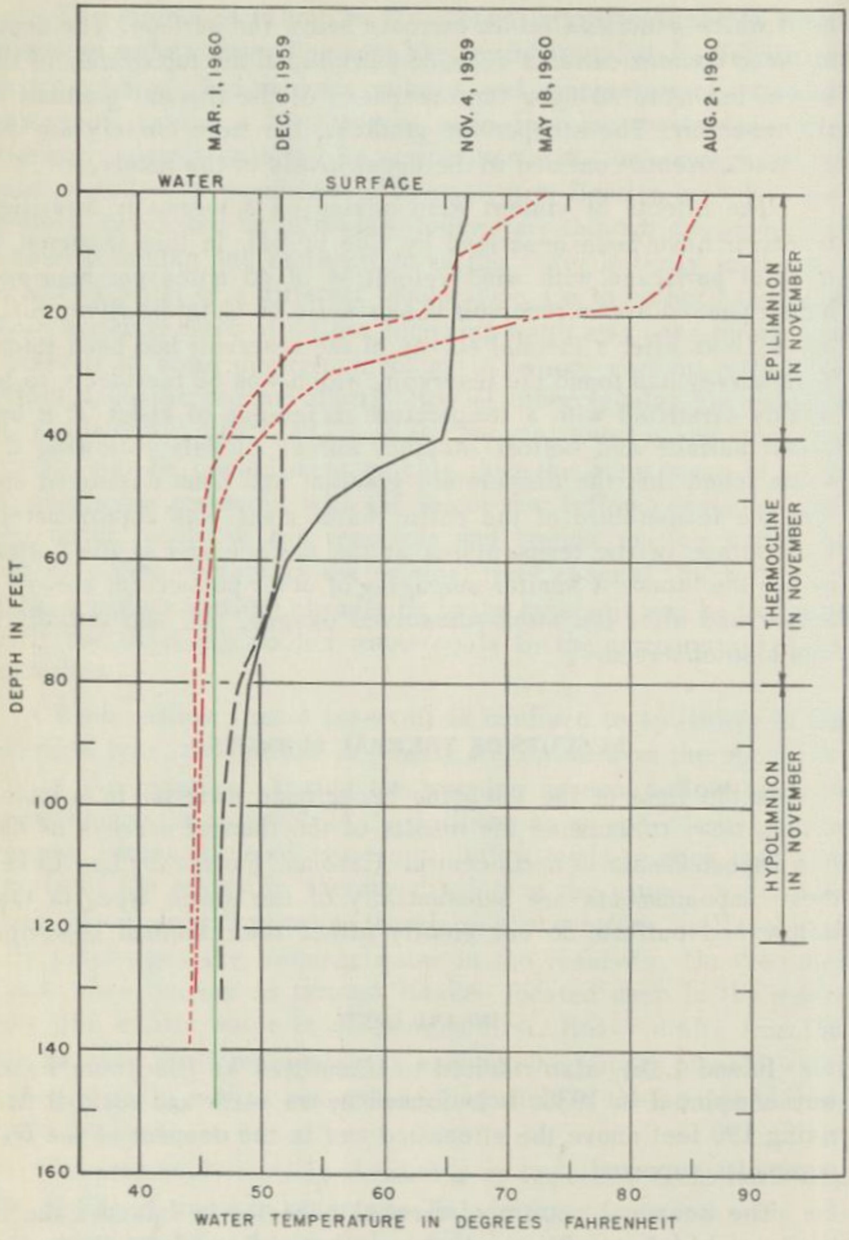

Figure 21.—Temperature profiles observed along range 2, Inland Lake.

plotted represent intermediate conditions and were omitted to avoid obscuring the figure.)

Referring to figure 21, the first temperature profile observed (Nov. 4, 1959) is better regarded as representing an intermediate stage rather than the beginning of the annual cycle of thermal stratification. At this time, a well-defined epilimnion existed in the upper 40 feet of the reservoir in which temperature ranged from about 67° F at the surface to 65° F at a depth of 40 feet. Below the epilimnion, temperature decreased sharply to 49° F at a depth of 80 feet, the approximate lower limit of the thermocline. Below 80 feet, a hypolimnion extended, with a temperature variation of only one degree, to the bottom of the reservoir.

During the ensuing colder weather, cooling of water near the surface and the consequent circulation reduced the temperature of the epilimnion and extended it to greater depth as shown by the next profile (Dec. 8, 1959).

By the time of the next plotted profile (Mar. 1, 1960), the epilimnion had further cooled and had reached the bottom, completely destroying the thermocline. At this time, the temperature of the reservoir was almost perfectly uniform at about 46° F from surface to bottom. Although occurring in the spring of the year, the condition then reached represents that previously described for reservoirs in more northerly latitudes as the fall overturning. With uniform temperature and density throughout the reservoir, vertical mixing was easily induced, and the reservoir continued to cool uniformly to a temperature of about 44° F, as indicated by the lower portion of the profile observed in April (not plotted) and that observed on May 18, 1960.

With the coming of warmer and longer daylight periods, water near the surface gained more heat during the day than it lost at night. Consequently, water cooled at night sank to form a layer of intermediate temperature between that at the surface and that of the main body of the reservoir. The continuation of this process warmed the reservoir to increasingly greater depths, thereby re-establishing a thermocline, which by the time of the next plotted profile (May 18, 1960), was well developed. The May profile also shows that the formation of an epilimnion in the upper 20 feet of the reservoir had been retarded by the development of a secondary

thermocline extending about 10 feet below the surface.

In the last profile plotted (Aug. 2, 1960), the primary thermocline is even steeper than in May, while the gradient of the secondary thermocline is much reduced. These changes promote a circulation in the epilimnion that will cool and extend it in the manner illustrated by the profile first described (Nov. 4, 1959), thus beginning another annual cycle. It will be noted from the August profile that although surface temperature was then the highest observed, temperatures at depths greater than 50 feet had increased only slightly, thus showing that the depths of the reservoir are not warmed substantially except when water is being cooled near the surface.

The seasonal pattern of thermal stratification in Inland Lake is shown in another and perhaps more effective manner by figure 22. In this figure, water temperatures at depths of 0.1, 10, 20, 50, and 100 feet as observed at range 1 (or, prior to November 1959, near the intake tower) have been plotted on the appropriate date of observation; the straight lines connecting the plotted points for each depth thus show approximately how temperature at that depth varied with time throughout the survey period. Reservoir stage and the monthly mean air temperature for the U.S. Weather Bureau station at Oneonta are also plotted in the figure. Although monthly air temperatures are not as significant as daily extremes of temperature, they do serve to show the general correlation between air and water temperatures. It will be observed that, in general, water temperature at the surface was about 5° higher than monthly air temperature during the warming season and about 10° higher during the cooling season. The pattern of thermal stratification shows no pronounced differences for the two individual years. From a relatively homogeneous thermal condition reached in December and extending through February, thermal stratification began to develop rapidly in March, and reached its peak development in September. Stratification was confined largely to the upper 50 feet of the reservoir; at and below the 100-foot depth, temperature averaged about 46° F and varied less than 5° during the entire survey period.

The longitudinal pattern of thermal stratification observed in Inland Lake on August 2, 1960, is shown by figure 23. Variation of temperature with depth was essentially the same at all ranges. The

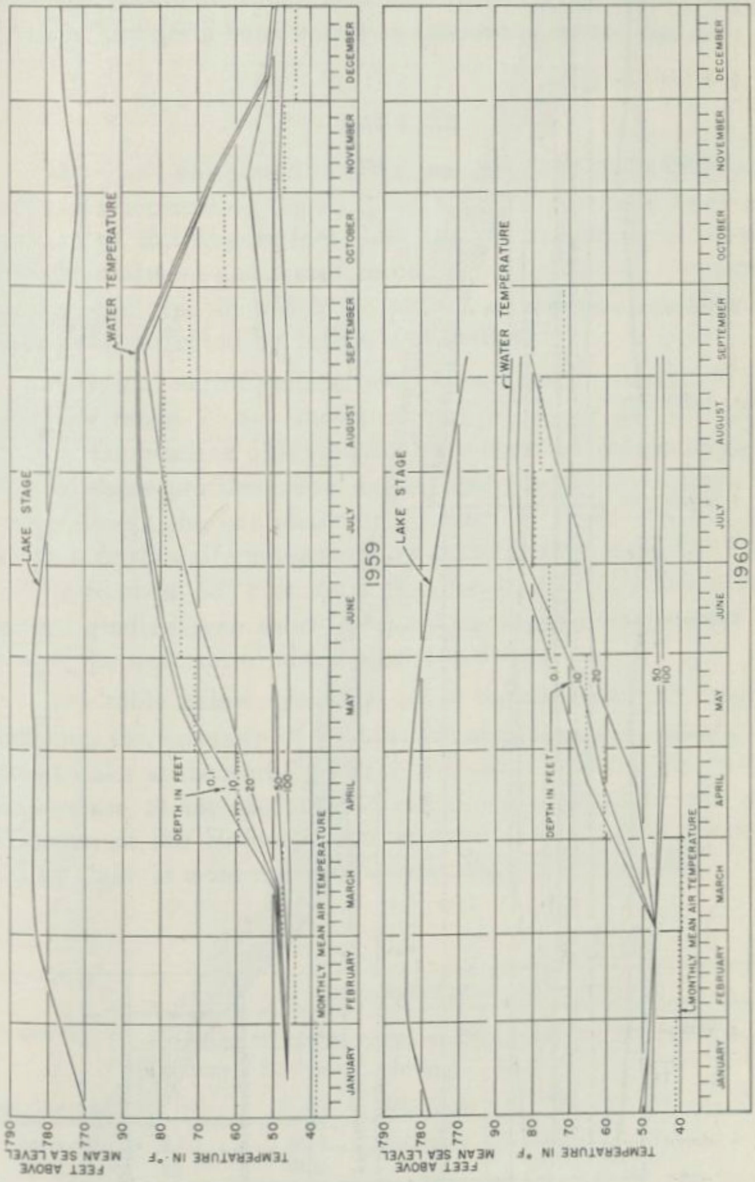

Figure 22.—Seasonal variation of water temperature at selected depths in Inland Lake, 1959-60.

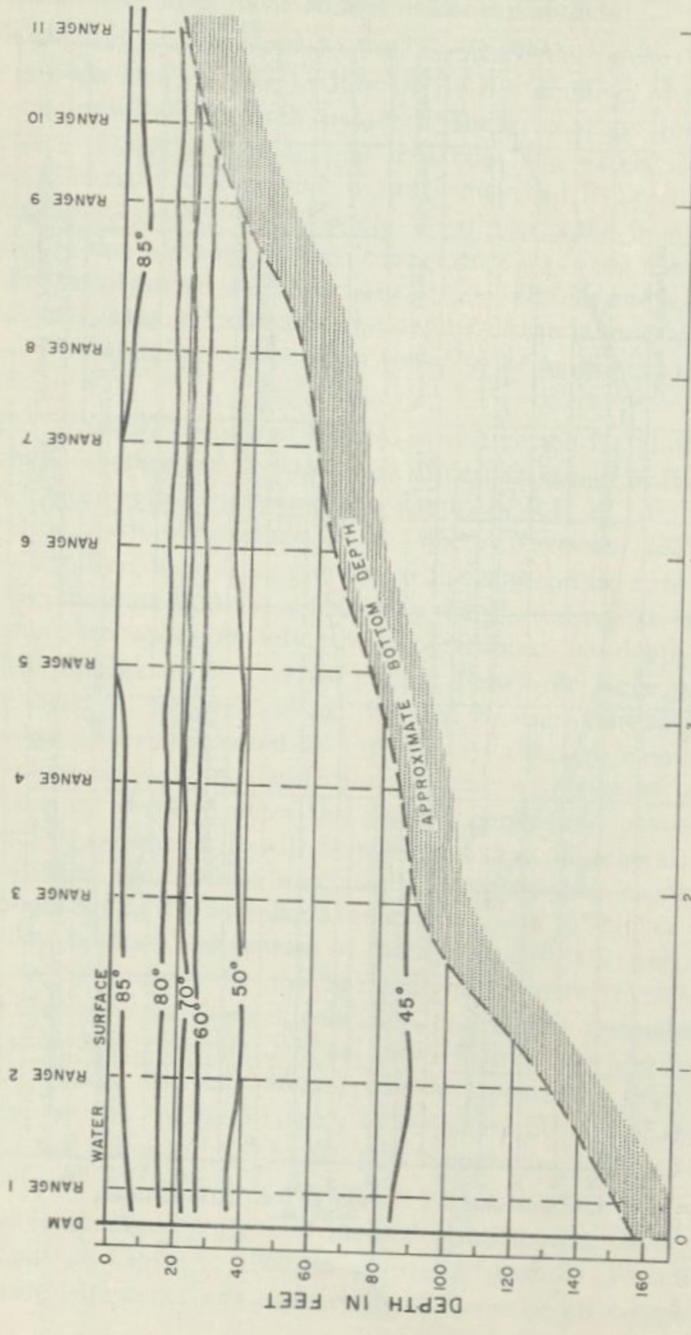

Figure 23.—Thermal distribution of water in Inland Lake on August 2, 1960.

"cold spot" near the surface between ranges 5 and 7 was apparently the result of inflow from the tributary that enters the reservoir from the north bank upstream from range 6 (see fig. 3).

LAY LAKE

Lay Dam, completed in 1914, was the first major hydroelectric power development on Coosa River. With its relatively small usable capacity of 48,000 acre feet, Lay Lake is essentially a run-of-the-river development and therefore can be classified as a reservoir of the dynamic type in which the pattern of thermal stratification is appreciably affected by inflow and outflow.

A typical set of vertical temperature profiles observed in Lay Lake (at range 2) are shown plotted in figure 24. Except for a shallow thermocline observed near the surface on some occasions, none of these profiles show any marked degree of thermal stratification except the one observed on May 24, 1960. The May profile shows a fairly uniform temperature gradient from about 85° F at the surface to about 68° F at the bottom depth of 51 feet; however, this thermal gradient was short-lived, having largely disappeared by the time of the next set of observations in June.

The table below, based on all of the data for both reservoirs, compares the extremes of temperature observed in Lay Lake and in Inland Lake at the surface and at a depth of 50 feet. The ranges in temperature at the surfaces of the two reservoirs are not greatly different; at the 50-foot depth, however, the range of temperature in Lay Lake is more than three times that in Inland Lake.

Depth of observation	Extremes of observed temperature					
	Lay Lake			Inland Lake		
	Maximum (°F)	Minimum (°F)	Range (degrees)	Maximum (°F)	Minimum (°F)	Range (degrees)
Surface	93.7	46.3	47.4	89.7	45.7	44.0
50 feet	85.7	46.0	39.7	57.2	44.9	12.3

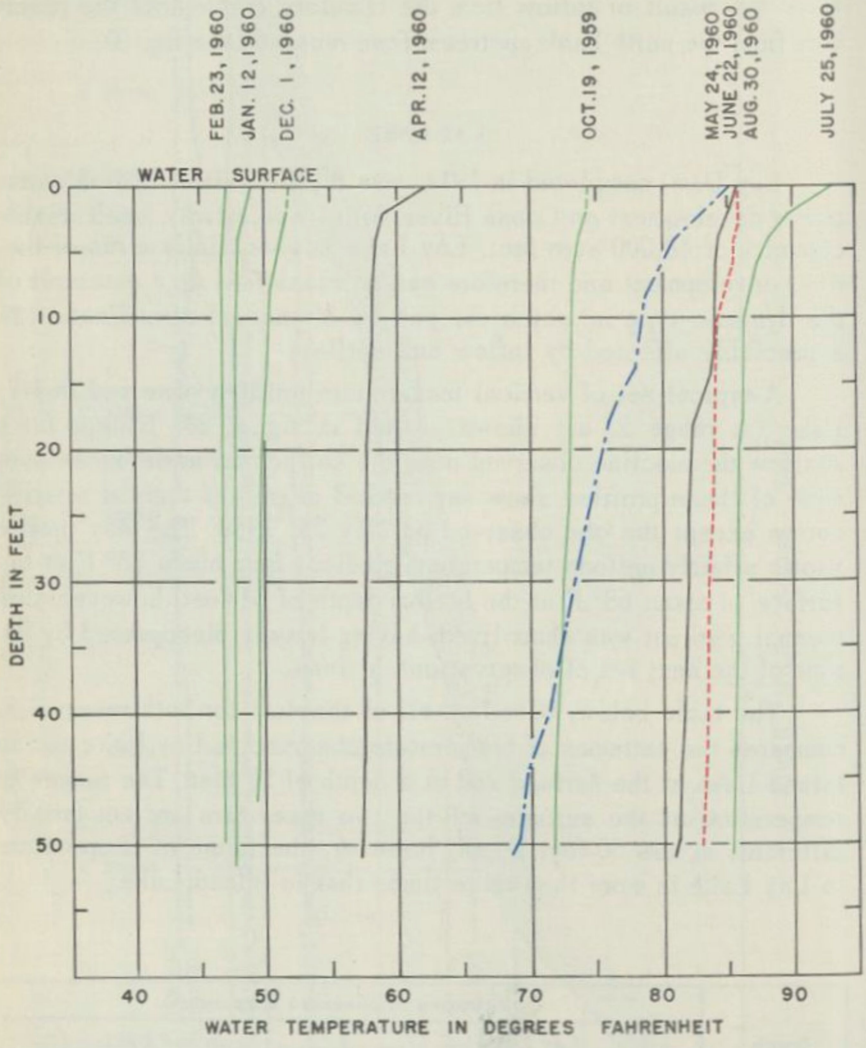

Figure 24.—Temperature profiles observed along range 2, Lay Lake.

The chronologic variation of water temperature at selected depths in Lay Lake as observed at range 2 is compared with monthly mean air temperature and daily inflow in figure 25. The overall influence of air temperature on water temperature is again evident, as is the general effect of inflow to reduce the scope of thermal stratification. Detailed effects of inflow are not apparent, however, largely because the water-temperature graphs were not defined at sufficiently short intervals of time. Little significance can be attached to the fact that thermal stratification was weak or absent during the periods of greatest inflow, for these periods occurred during months when even static impoundments show little thermal stratification.

SYLACAUGA RESERVOIR, TUSCALOOSA AND WALKER COUNTY LAKES

Thermal profiles observed in each of these reservoirs at a representative observation range are shown in figures 26, 27, and 28. These three reservoirs are quite similar in thermal behavior, both with respect to the actual value of temperatures experienced and the seasonal variation of temperature with depth. The latter conforms closely to the ideal pattern already described except at Sylacauga Reservoir (fig. 26), where one temperature profile deviates from the normal pattern. This is the profile observed on Jan. 15, 1960, which indicates thermal stratification with well defined epilimnion, thermocline, and hypolimnion at a time of year when a condition of nearly uniform temperature from surface to bottom could be expected. A thermally homogeneous condition was, in fact, observed in Tuscaloosa County Lake 6 days later on January 21 (fig. 27) and in Walker County Lake only 5 days later on January 20 (fig. 28).

Air-temperature records of the U.S.Weather Bureau show that an unseasonably warm period was experienced generally over north-central Alabama January 10-15, followed by a sharp lowering of temperature extending through January 23. Temperature records for Sylacauga (fig. 29) are representative of the general pattern of daily temperature to which all three of the reservoirs in question were subjected.

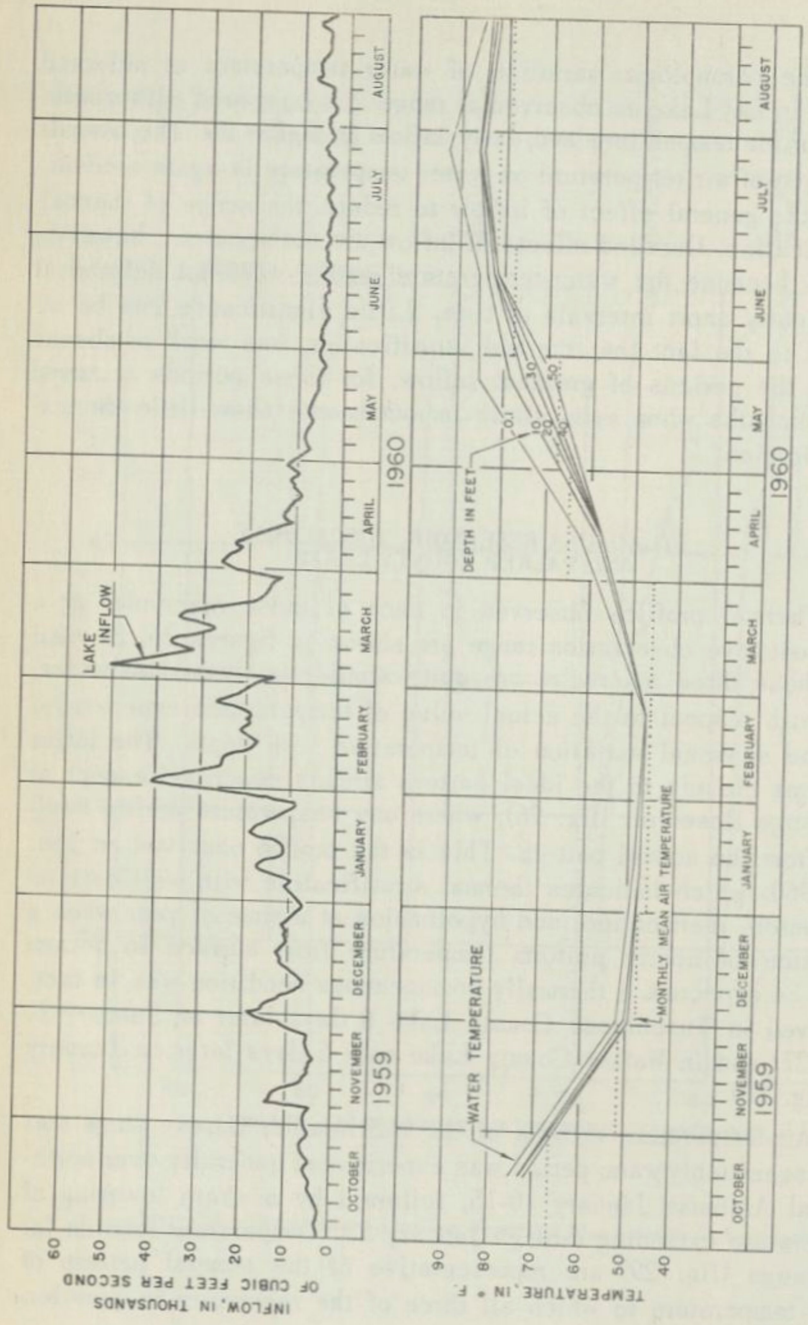

Figure 25.—Seasonal variation of water temperature at selected depths in Lay Lake, 1959-60.

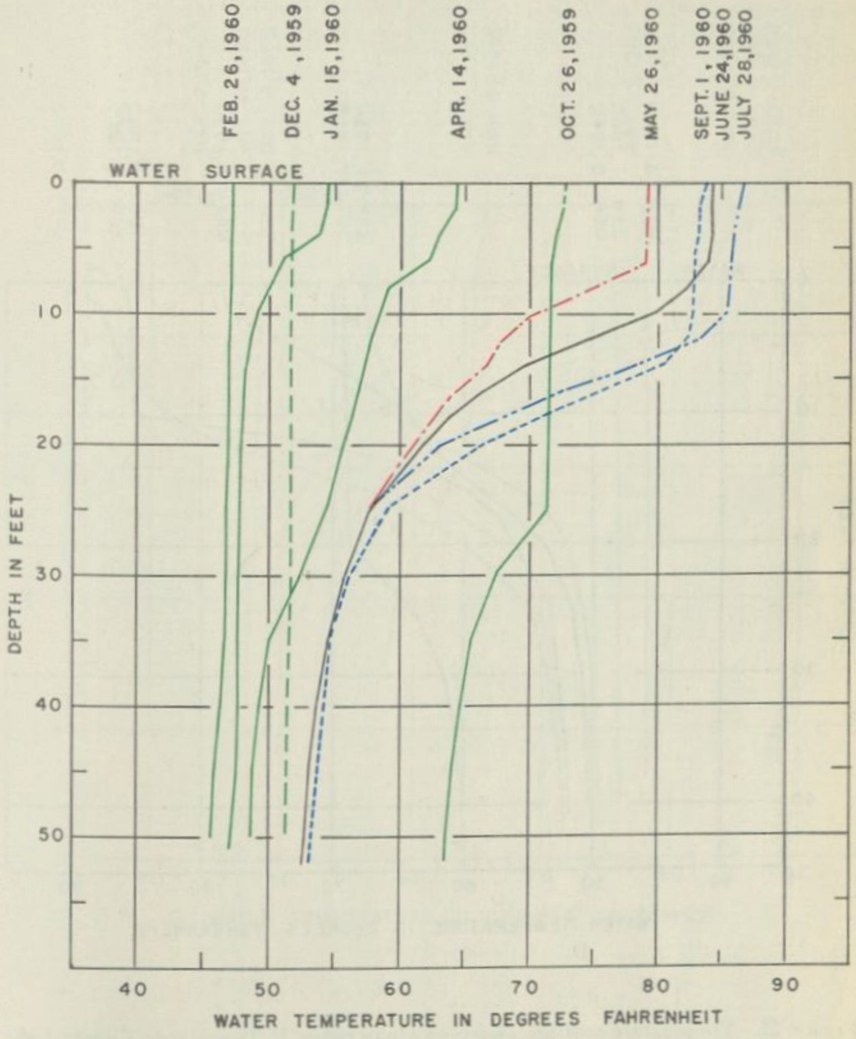

Figure 26.—Temperature profiles observed along range 2, Sylacauga Reservoir.

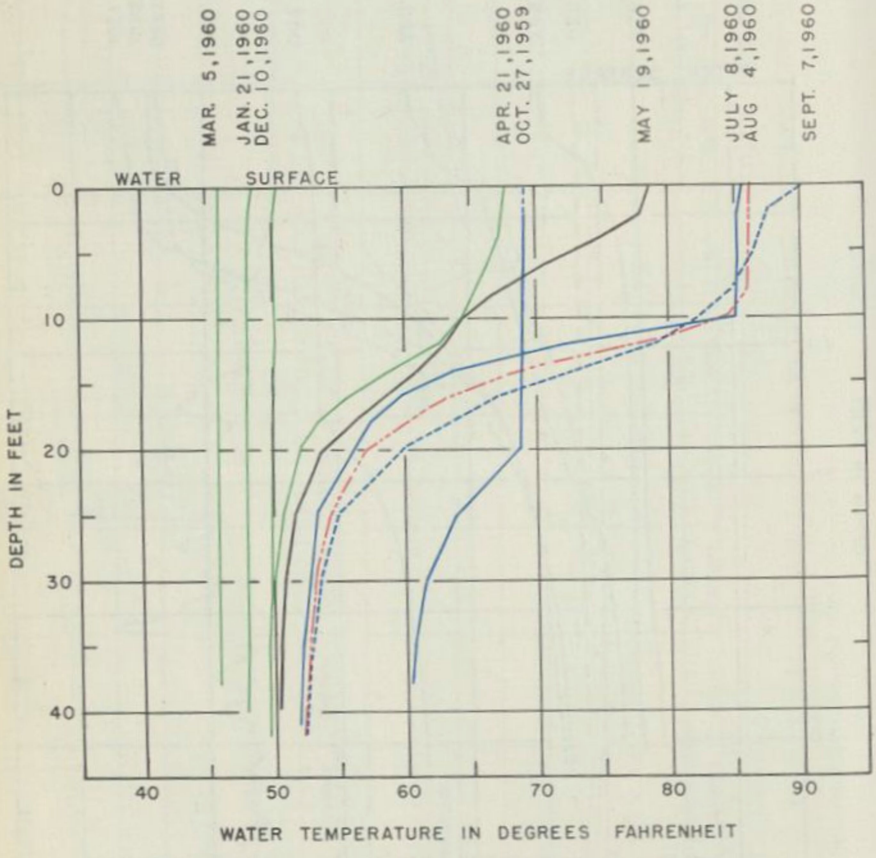

Figure 27.–Temperature profiles observed along range 1, Tuscaloosa County Lake.

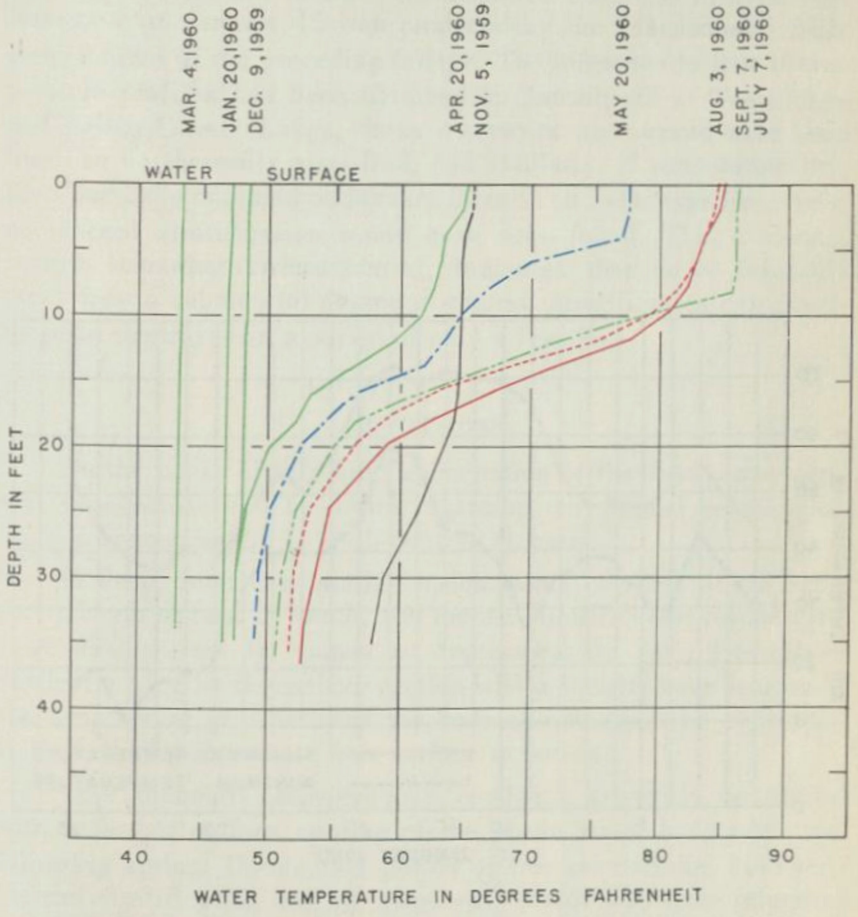

Figure 28.—Temperature profiles observed along range 1, Walker County Lake.

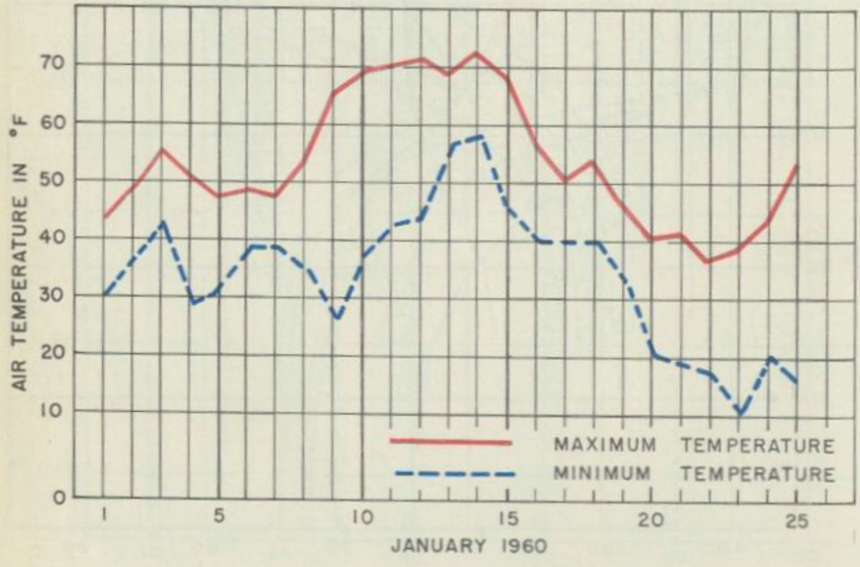

Figure 29.–Maximum and minimum daily air temperatures at Sylacauga, Ala., January 1960.

Apparently, the thermal stratification observed in Sylacauga Reservoir on January 15 was produced by the unseasonably high temperatures of the preceding 6 days. The inference is that if temperature profiles had been obtained on January 15 at Tuscaloosa and Walker County Lakes, those reservoirs, too, would have been found to be thermally stratified; and similarly, if temperature profiles had been obtained on January 20 or 21 at Sylacauga Reservoir, no thermal stratification would have been found. This evidence, though somewhat circumstantial, indicates that under favorable conditions a substantial degree of thermal stratification can develop or be destroyed in a period of only a few days.

CONCLUSIONS

On the basis of this brief examination of the data, some general conclusions can be drawn regarding the thermal behavior of storage impoundments in north-central Alabama.

In deep, relatively static impoundments, thermal strata ordinarily begin to form in March, and thermal stratification reaches its peak development in August or September. By early December, vertical mixing by thermal convection will ordinarily have destroyed the temperature gradient, and the body of water will be of essentially uniform temperature from surface to bottom.

This thermally homogeneous condition generally continues with a further uniform cooling of the entire water body until the following spring. During this period of free overturning, however, thermal stratification may be temporarily restored by even relatively brief periods of unseasonably warm winter weather. Ordinarily, complete or lasting ice cover does not form so that a condition of winter stagnation is not experienced.

The approximate annual range in water temperature to be expected at various depths in substantially static impoundments in north-central Alabama is shown by figure 30. The curves labeled *minimum temperature* and *maximum temperature* in this figure do not represent vertical temperature profiles at any particular time; they are merely lines drawn so as to envelope, with a moderate margin, the extremes of temperature observed at selected depths during the

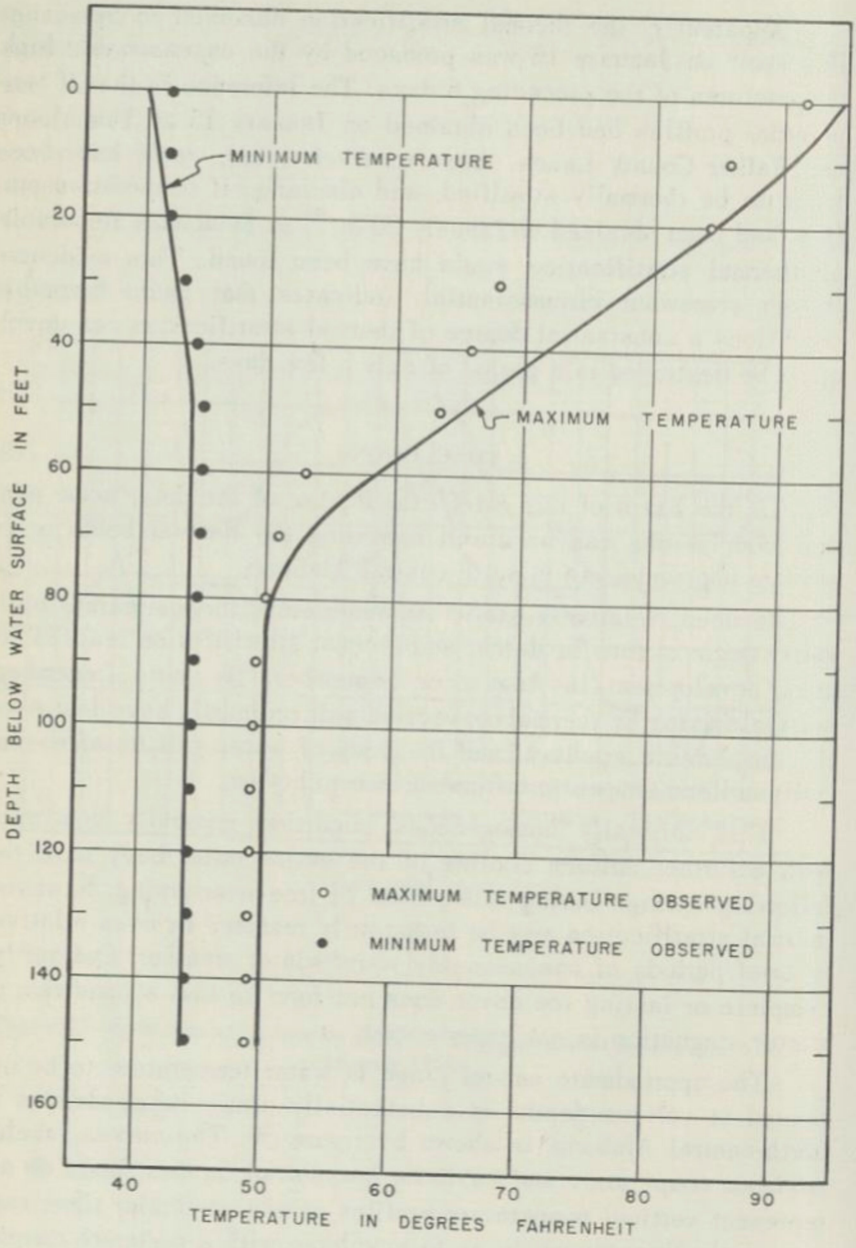

Figure 30.—Annual range in water temperature with depth in static impoundments of north-central Alabama.

period of thermal surveys in the four reservoirs (Lay Lake excluded) that represent impoundments of the static type. For depths greater than 50 feet, the data plotted in figure 30 are for only one reservoir—Inland Lake. Thus, figure 30 indicates that in deep, static impoundments, temperatures just under the surface may range from 40° F to 95° F during a climatically typical year; whereas, at a depth of 100 feet, for example, a much smaller range from 44° F to 50° F may be expected.

In impoundments of the dynamic type, as represented by Lay Lake, thermal stratification also occurs, but to a smaller degree. Although the seasonal pattern of thermal stratification tends to be the same as in static impoundments, the normal temperature profiles are distorted or destroyed by turbulent mixing and inflow. Because inflow is more variable than seasonal changes in air temperature, and because its effects on the thermal composition of the water body are often immediate rather than gradual, the seasonal pattern of thermal stratification, in depth, of dynamic impoundments is less subject to prediction.

RESERVOIR TEMPERATURE DATA

Data collected in the thermal surveys of the five storage impoundments are presented in their entirety in the following tables.

The tables are largely self-explanatory. For each reservoir, the data have been grouped according to observation range. The date of the observations and the average air temperature as observed in the survey boat are shown by the column headings for each set of observations. Observations identified as "Surf." were made about 0.1 foot below the water surface. The bottom depth, when recorded in the field notes, is shown as an underscored figure.

INLAND LAKE

Depth (ft) and water temperature (° F), near intake tower

Jan. 12, 1959 Air temp. 57°		Feb. 18, 1959 Air temp. 47°		Mar. 16, 1959 Air temp. 58°		Apr. 16, 1959 Air temp. 76°		May 15, 1959 Air temp. 67°		June 12, 1959 Air temp. 83°		July 28, 1959 Air temp. 92°		Sept. 9, 1959 Air temp. 89°			
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	46.5	Surf.	48.4	Surf.	50.0	Surf.	64.6	Surf.	74.8	Surf.	80.8	Surf.	86.3	Surf.	86.1		
2	46.6	2	48.5	2	50.0	2	63.3	2	74.8	2	79.9	2	86.5	2	86.0		
4	46.4	4	48.5	4	49.8	4	61.0	4	74.2	4	79.8	4	86.4	4	85.8		
6	46.3	6	48.5	6	49.6	6	60.7	6	73.8	6	79.7	6	86.3	6	85.8		
8	46.3	8	48.4	8	49.4	8	60.3	8	73.7	8	79.5	8	86.3	8	85.6		
10	46.3	10	48.3	10	49.3	10	59.8	10	73.6	10	79.4	10	85.9	10	85.6		
12	46.3	12	48.2	12	49.1	12	59.6	12	73.4	12	79.0	12	85.9	12	85.4		
14	46.3	14	48.0	14	49.0	14	59.3	14	73.2	14	78.3	14	84.9	14	85.2		
16	46.3	16	47.9	16	49.0	16	59.2	16	66.2	16	73.6	16	83.8	16	85.0		
18	46.3	18	47.8	18	49.0	18	58.2	18	63.6	18	71.3	18	82.9	18	84.6		
20	46.3	20	47.7	20	48.9	20	56.1	20	62.6	20	69.9	20	79.4	20	84.4		
25	46.2	25	47.4	25	48.9	25	54.5	25	56.5	25	64.4	25	75.7	25	75.6		
30	46.2	30	47.2	30	48.9	30	52.4	30	54.4	30	58.5	30	61.8	30	65.6		
35	46.2	35	47.1	35	48.8	35	51.0	35	53.0	35	55.7	35	57.5	35	60.6		
40	46.2	40	47.0	40	48.8	40	50.1	40	51.3	40	54.0	40	55.0	40	57.3		
45	46.2	45	46.6	45	48.4	45	49.5	45	50.0	45	52.8	45	53.4	45	55.0		
50	46.2	50	46.3	50	47.8	50	49.0	50	49.4	50	51.3	50	51.9	50	52.7		
60	46.2	60	46.2	60	47.4	60	48.4	60	48.1	60	49.4	60	50.2	60	50.0		
70	46.2	70	46.0	70	46.7	70	47.6	70	47.6	70	48.4	70	48.0	70	48.6		
80	46.2	80	45.9	80	46.4	80	46.8	80	47.0	80	47.0	80	47.3	80	47.7		
90	46.3	90	45.8	90	46.0	90	46.4	90	46.5	90	46.6	90	46.6	90	46.9		
100	46.3	100	45.7	100	45.6	100	46.2	100	46.4	100	46.5	100	46.4	100	46.6		
110	46.3	110	45.6	110	45.4	110	46.0	110	46.1	110	46.4	110	46.1	110	46.4		
120	46.3	120	45.6	120	45.2	120	45.8	120	46.0	120	46.4	120	46.0	120	46.4		
130	46.3	130	45.5	130	45.0	130	45.6	130	45.9	130	46.3	130	45.9	130	46.4		
140	46.3	140	45.5	140	45.0	140	45.6	140	45.6	140	46.3	140	45.9	140	46.4		
150	46.2	150	45.5	150	44.9	150	45.6	150	45.8	150	46.3	150	45.8	150	46.4		

Depth (ft) and water temperature (° F), Range 1

Nov. 4, 1959 Air temp. 71°		Dec. 8, 1959 Air temp. 58°		Jan. 19, 1960 Air temp. 33°		Mar. 1, 1960 Air temp. 32°		Apr. 19, 1960 Air temp. 74°		May 18, 1960 Air temp. 89°		July 6, 1960 Air temp. 88°		Aug. 2, 1960 Air temp. 97°		Sept. 6, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	52.3	Surf.	48.5	Surf.	46.3	Surf.	65.0	Surf.	72.3	Surf.	85.2	Surf.	86.6	Surf.	85.7
2	67.0	2	52.0	2	48.4	2	46.3	2	63.2	2	70.2	2	84.8	2	86.3	2	85.6
4	66.7	4	51.7	4	48.4	4	46.3	4	62.3	4	69.6	4	84.7	4	86.2	4	84.2
6	66.5	6	51.7	6	48.4	6	46.3	6	61.6	6	69.1	6	84.2	6	86.0	6	83.8
8	66.2	8	51.6	8	48.4	8	46.3	8	61.2	8	68.8	8	83.8	8	85.0	8	83.7
10	66.1	10	51.6	10	48.4	10	46.3	10	61.2	10	66.5	10	83.7	10	84.7	10	83.2
12	66.0	12	51.6	12	48.4	12	46.3	12	61.0	12	65.6	12	83.6	12	84.3	12	83.2
14	66.0	14	51.6	14	48.4	14	46.3	14	57.8	14	65.2	14	82.2	14	83.8	14	82.8
16	66.0	16	51.5	16	48.4	16	46.3	16	55.4	16	64.2	16	76.8	16	83.2	16	81.8
18	66.0	18	51.5	18	48.4	18	46.3	18	54.3	18	63.3	18	70.0	18	80.8	18	81.3
20	66.0	20	51.5	20	48.5	20	46.3	20	52.2	20	62.0	20	66.2	20	73.7	20	80.3
25	65.8	25	51.5	25	48.5	25	46.2	25	50.5	25	53.8	25	58.8	25	62.2	25	68.3
30	65.8	30	51.5	30	48.5	30	46.2	30	49.0	30	50.8	30	53.3	30	56.2	30	59.6
35	65.8	35	51.5	35	48.5	35	46.2	35	47.0	35	48.5	35	50.7	35	52.7	35	55.0
40	65.7	40	51.5	40	48.5	40	46.2	40	46.0	40	47.3	40	48.6	40	48.8	40	50.7
45	60.7	45	51.5	45	48.5	45	46.2	45	45.3	45	46.3	45	47.2	45	47.6	45	47.9
50	57.2	50	51.5	50	48.5	50	46.2	50	45.2	50	45.7	50	46.6	50	46.3	50	46.6
60	53.0	60	51.5	60	48.4	60	46.2	60	44.8	60	45.1	60	45.8	60	45.7	60	45.7
70	50.7	70	50.7	70	48.3	70	46.2	70	44.7	70	44.9	70	45.4	70	45.3	70	45.3
80	50.0	80	48.3	80	48.2	80	46.2	80	44.7	80	44.8	80	45.2	80	45.1	80	45.2
90	49.4	90	47.2	90	48.0	90	46.2	90	44.5	90	44.6	90	45.1	90	44.9	90	44.9
100	49.2	100	46.9	100	47.9	100	46.2	100	44.5	100	44.4	100	45.0	100	44.8	100	44.8
110	49.0	110	46.5	110	47.7	110	46.2	110	44.4	110	44.4	110	44.9	110	44.8	110	44.8
120	49.0	120	46.4	120	47.5	120	46.2			120	44.3	120	44.8	120	44.7	120	44.8
126	49.0	130	46.5	130	47.2	130	46.2			130	44.3	130	44.8	130	44.7	130	44.8
		140	46.6	140	47.0	140	46.2			140	44.2	140	44.8	140	44.6	140	44.8
		150	46.6	150	46.9	150	46.2			150	44.2	150	44.8	150	44.6	150	44.8

INLAND LAKE—Continued

Depth (ft) and water temperature (°F), Range 2

Nov. 4, 1959 Air temp. 70°		Dec. 8, 1959 Air temp. 52°		Jan. 19, 1960 Air temp. 37°		Mar. 1, 1960 Air temp. 32°		Apr. 19, 1960 Air temp. 72°		May 18, 1960 Air temp. 87°		July 6, 1960 Air temp. 88°		Aug. 2, 1960 Air temp. 95°		Sept. 6, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.8	Surf.	48.6	Surf.	46.3	Surf.	63.2	Surf.	73.1	Surf.	84.8	Surf.	86.2	Surf.	85.7
2	66.9	2	51.8	2	48.7	2	46.3	2	62.7	2	71.7	2	84.7	2	85.7	2	85.4
4	66.7	4	51.8	4	48.8	4	46.3	4	61.7	4	70.0	4	84.3	4	85.0	4	84.7
6	66.4	6	51.8	6	48.8	6	46.3	6	61.5	6	68.7	6	84.1	6	84.7	6	83.8
8	66.1	8	51.8	8	48.7	8	46.3	8	61.2	8	68.0	8	83.7	8	84.4	8	83.6
10	66.0	10	51.8	10	48.7	10	46.3	10	61.0	10	66.1	10	83.5	10	84.2	10	83.3
12	65.9	12	51.8	12	48.7	12	46.3	12	60.7	12	65.5	12	83.3	12	84.0	12	83.0
14	65.8	14	51.7	14	48.7	14	46.3	14	58.3	14	65.3	14	82.3	14	83.2	14	82.6
16	65.7	16	51.7	16	48.7	16	46.3	16	56.2	16	64.3	16	77.3	16	82.3	16	81.8
18	65.7	18	51.7	18	48.7	18	46.3	18	54.6	18	63.8	18	71.5	18	81.0	18	81.7
20	65.7	20	51.7	20	48.7	20	46.3	20	53.1	20	62.8	20	66.8	20	72.6	20	80.3
25	65.7	25	51.7	25	48.7	25	46.3	25	50.5	25	52.7	25	59.0	25	63.0	25	69.2
30	65.5	30	51.7	30	48.7	30	46.3	30	48.8	30	50.7	30	54.3	30	55.2	30	59.3
35	65.5	35	51.7	35	48.7	35	46.3	35	46.8	35	48.8	35	50.8	35	52.2	35	54.2
40	64.8	40	51.7	40	48.7	40	46.3	40	45.7	40	47.2	40	48.7	40	50.0	40	50.8
45	59.7	45	51.7	45	48.7	45	46.3	45	45.4	45	46.0	45	47.2	45	47.7	45	48.3
50	55.8	50	51.7	50	48.7	50	46.3	50	45.2	50	45.5	50	46.7	50	46.5	50	47.2
60	52.2	60	51.6	60	48.6	60	46.3	60	44.8	60	45.0	60	46.0	60	45.8	60	45.8
70	50.5	70	50.6	70	48.3	70	46.3	70	44.7	70	44.8	70	45.7	70	45.4	70	45.5
80	49.2	80	48.4	80	48.1	80	46.3	80	44.7	80	44.5	80	45.3	80	45.2	80	45.2
90	48.7	90	47.5	90	47.8	90	46.3	90	44.6	90	44.6	90	45.2	90	45.0	90	44.9
100	48.5	100	47.2	100	47.8	100	46.3	100	44.6	100	44.5	100	45.1	100	44.8	100	44.8
110	48.3	110	46.8	110	47.6	110	46.2	110	44.5	110	44.4	110	45.0	110	44.7	110	44.8
120	48.2	120	46.8	120	47.1	120	46.2	120	44.5	120	44.3	120	44.9	120	44.7	120	44.8
122	-	130	46.8	123	47.0	130	46.2	130	44.4	130	44.3	130	44.8	129	44.7	121	44.8
		132	-	125	-	140	46.2	138	44.3	137	44.3	140	44.8	131	-	123	-
						150	46.2	140	-	139	-	150	44.8				

Depth (ft) and water temperature (° F), Range 3

Nov. 4, 1959 Air temp. 65°		Dec. 8, 1959 Air temp. 55°		Jan. 19, 1960 Air temp. 38°		Mar. 1, 1960 Air temp. 31°		Apr. 19, 1960 Air temp. 70°		May 18, 1960 Air temp. 84°		July 6, 1960 Air temp. 87°		Aug. 2, 1960 Air temp. 96°		Sept. 6, 1960 Air temp. 95°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.7	Surf.	48.7	Surf.	46.1	Surf.	63.0	Surf.	73.8	Surf.	85.2	Surf.	87.2	Surf.	85.3
2	65.7	2	51.7	2	48.9	2	46.2	2	62.2	2	71.7	2	85.0	2	85.3	2	84.5
4	65.6	4	51.7	4	49.0	4	46.2	4	62.0	4	70.7	4	84.8	4	84.7	4	83.5
6	65.6	6	51.7	6	49.0	6	46.2	6	61.6	6	68.9	6	84.4	6	84.4	6	83.2
8	65.5	8	51.7	8	48.8	8	46.2	8	61.2	8	67.6	8	84.2	8	84.2	8	83.0
10	65.5	10	51.7	10	48.8	10	46.2	10	61.0	10	65.3	10	83.8	10	84.0	10	82.8
12	65.5	12	51.7	12	48.8	12	46.2	12	60.0	12	65.0	12	83.5	12	83.8	12	82.7
14	65.5	14	51.7	14	48.8	14	46.2	14	58.0	14	64.2	14	79.2	14	83.2	14	82.7
16	65.4	16	51.7	16	48.8	16	46.2	16	56.0	16	63.8	16	76.3	16	82.2	16	82.2
18	65.3	18	51.7	18	48.8	18	46.2	18	54.7	18	63.1	18	70.8	18	80.5	18	81.8
20	65.3	20	51.6	20	48.8	20	46.2	20	52.8	20	62.0	20	66.3	20	73.2	20	79.6
25	65.3	25	51.6	25	48.8	25	46.2	25	50.7	25	54.7	25	58.2	25	61.8	25	69.2
30	65.3	30	51.6	30	48.8	30	46.2	30	47.8	30	51.2	30	53.9	30	56.8	30	58.8
35	65.3	35	51.6	35	48.7	35	46.2	35	46.3	35	48.3	35	50.8	35	52.1	35	55.0
40	64.0	40	51.6	40	48.7	40	46.2	40	45.6	40	47.2	40	48.4	40	49.2	40	51.0
45	59.6	45	51.6	45	48.7	45	46.2	45	45.2	45	46.1	45	47.2	45	47.7	45	47.8
50	56.0	50	51.6	50	48.7	50	46.2	50	45.0	50	45.4	50	46.4	50	46.8	50	46.7
60	52.1	60	51.5	60	48.7	60	46.2	60	44.8	60	45.1	60	46.0	60	45.9	60	45.8
70	50.3	70	50.7	70	48.5	70	46.2	70	44.8	70	44.8	70	45.6	70	45.4	70	45.5
80	49.6	80	48.5	80	48.2	80	46.2	80	44.7	80	44.7	80	45.4	80	45.3	80	45.3
88	49.3	90	48.3	90	47.6	90	46.2	90	44.7	90	44.7	90	45.3	85	45.2	90	45.3
90	-	93	48.0	100	47.5	100	46.2	93	44.7	100	44.7	92	-	87	-	92	-
		95	-	104	47.5	105	46.2	95	-	102	44.7						
				106	-	107	-			104	-						

INLAND LAKE—Continued

Depth (ft) and water temperature (° F), Range 4

Nov. 4, 1959 Air temp. 65°		Dec. 8, 1959 Air temp. 52°		Jan. 19, 1960 Air temp. 37°		Feb. 29, 1960 Air temp. 30°		Apr. 19, 1960 Air temp. 70°		May 18, 1960 Air temp. 81°		July 6, 1960 Air temp. 89°		Aug. 2, 1960 Air temp. 96°		Sept. 6, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.7	Surf.	48.9	Surf.	45.9	Surf.	62.3	Surf.	72.7	Surf.	85.0	Surf.	86.2	Surf.	85.3
2	65.7	2	51.6	2	48.9	2	46.2	2	61.9	2	71.6	2	84.6	2	85.4	2	84.5
4	65.5	4	51.6	4	48.9	4	46.2	4	61.8	4	70.8	4	84.3	4	84.9	4	83.5
6	65.5	6	51.6	6	49.0	6	46.2	6	61.2	6	69.5	6	84.2	6	84.5	6	83.2
8	65.4	8	51.5	8	48.9	8	46.2	8	61.2	8	68.0	8	84.0	8	84.2	8	83.0
10	65.3	10	51.5	10	48.9	10	46.2	10	61.0	10	65.7	10	83.8	10	83.9	10	82.8
12	65.3	12	51.5	12	48.9	12	46.2	12	59.8	12	64.1	12	82.0	12	83.5	12	82.7
14	65.3	14	51.5	14	48.9	14	46.2	14	58.2	14	64.0	14	80.2	14	83.2	14	82.7
16	65.2	16	51.5	16	48.9	16	46.2	16	55.0	16	63.5	16	76.0	16	83.0	16	82.2
18	65.2	18	51.5	18	48.9	18	46.2	18	54.3	18	62.8	18	71.2	18	78.8	18	81.8
20	65.2	20	51.5	20	48.9	20	46.2	20	52.7	20	61.1	20	66.0	20	73.5	20	79.6
25	65.2	25	51.5	25	48.9	25	46.2	25	50.3	25	54.5	25	58.2	25	62.3	25	69.2
30	65.2	30	51.5	30	48.9	30	46.2	30	48.2	30	51.0	30	53.7	30	55.5	30	58.8
35	65.1	35	51.5	35	48.9	35	46.2	35	47.2	35	48.8	35	50.8	35	51.7	35	55.0
40	63.8	40	51.5	40	48.9	40	46.2	40	46.2	40	47.4	40	48.3	40	49.0	40	51.0
45	58.7	45	51.5	45	48.9	45	46.2	45	45.3	45	46.3	45	47.3	45	47.7	45	47.8
50	55.8	50	51.5	50	48.9	50	46.2	50	45.1	50	45.6	50	46.7	50	46.7	50	46.7
60	52.3	60	51.5	60	48.7	60	46.2	60	44.9	60	45.2	60	45.8	60	45.8	60	45.8
70	50.3	70	50.7	70	48.3	70	46.1	70	44.8	70	44.8	70	45.7	70	45.5	70	45.5
80	49.8	80	48.7	80	48.0	80	46.1	80	44.8	80	44.7	80	45.6	80	45.3	80	45.3
84	49.6	90	48.3	90	47.7	90	46.1	90	44.7	90	44.7	83	45.5	86	45.3	90	45.3
86	-	92	-	94	47.7	97	46.1	98	44.7	96	44.7	85	-	88	-	92	-
				96	-	99	-	100	-	98	-						

Depth (ft) and water temperature (° F), Range 5

Nov. 3, 1959 Air temp. 72°		Dec. 8, 1959 Air temp. 51°		Jan. 19, 1960 Air temp. 37°		Mar. 1, 1960 Air temp. 30°		Apr. 19, 1960 Air temp. 66°		May 18, 1960 Air temp. 80°		July 6, 1960 Air temp. 87°		Aug. 2, 1960 Air temp. 93°		Sept. 6, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.6	Surf.	49.0	Surf.	46.0	Surf.	62.2	Surf.	71.2	Surf.	84.7	Surf.	85.2	Surf.	84.0
2	66.1	2	51.5	2	49.2	2	46.2	2	62.2	2	70.9	2	84.4	2	84.7	2	83.2
4	65.9	4	51.5	4	49.2	4	46.2	4	61.8	4	70.1	4	84.2	4	84.3	4	82.8
6	65.7	6	51.5	6	49.2	6	46.3	6	61.6	6	70.0	6	84.2	6	84.1	6	82.8
8	65.7	8	51.5	8	49.2	8	46.3	8	61.4	8	69.0	8	84.1	8	84.0	8	82.8
10	65.7	10	51.4	10	49.1	10	46.3	10	61.2	10	66.3	10	84.0	10	83.8	10	82.4
12	65.6	12	51.3	12	49.1	12	46.3	12	60.5	12	65.3	12	83.7	12	83.6	12	83.0
14	65.6	14	51.3	14	49.1	14	46.3	14	58.6	14	64.8	14	80.2	14	83.4	14	82.8
16	65.5	16	51.3	16	49.1	16	46.3	16	54.3	16	63.7	16	75.2	16	83.3	16	82.6
18	65.5	18	51.3	18	49.1	18	46.3	18	54.2	18	63.0	18	71.4	18	79.2	18	81.7
20	65.5	20	51.3	20	49.1	20	46.3	20	52.9	20	60.4	20	66.8	20	72.0	20	80.7
25	65.5	25	51.3	25	49.1	25	46.3	25	51.1	25	53.6	25	58.3	25	61.7	25	68.2
30	65.5	30	51.3	30	49.1	30	46.3	30	48.9	30	51.2	30	54.5	30	56.0	30	59.2
35	65.2	35	51.3	35	49.1	35	46.3	35	47.8	35	49.3	35	51.3	35	52.2	35	55.2
40	63.8	40	51.3	40	49.1	40	46.3	40	46.1	40	47.7	40	49.5	40	49.3	40	51.3
45	60.0	45	51.3	45	49.1	45	46.3	45	45.3	45	46.3	45	47.8	45	47.8	45	48.4
50	56.6	50	51.3	50	49.1	50	46.3	50	45.1	50	45.8	50	46.8	50	46.7	50	47.2
60	52.7	60	51.3	60	49.1	60	46.3	60	45.0	60	45.3	60	46.3	60	46.0	60	46.2
70	51.0	70	50.6	70	48.5	70	46.2	70	45.0	70	45.0	70	46.0	70	45.7	67	45.8
76	50.5	79	49.0	80	48.2	77	46.2	80	45.0	80	45.2	78	45.8	75	45.6	69	-
78	-	81	-	85	48.2	79	-	85	44.7	84	45.2	80	-	77	-		
				87	-			87	-	86	-						

INLAND LAKE—Continued

Depth (ft) and water temperature (° F), Range 6

Nov. 3, 1959 Air temp. 72°		Dec. 7, 1959 Air temp. 47°		Jan. 19, 1960 Air temp. 38°		Feb. 29, 1960 Air temp. 43°		Apr. 19, 1960 Air temp. 64°		May 17, 1960 Air temp. 85°		July 6, 1960 Air temp. 83°		Aug. 2, 1960 Air temp. 92°		Sept. 6, 1960 Air temp. 92°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	52.2	Surf.	49.2	Surf.	46.9	Surf.	62.4	Surf.	73.3	Surf.	84.0	Surf.	84.6	Surf.	83.4
2	66.7	2	52.2	2	49.4	2	46.9	2	62.2	2	73.0	2	83.6	2	84.6	2	82.8
4	66.5	4	52.0	4	49.4	4	46.9	4	62.0	4	72.8	4	83.2	4	84.3	4	82.5
6	66.4	6	51.9	6	49.4	6	46.8	6	62.0	6	71.9	6	83.2	6	84.0	6	82.5
8	66.2	8	51.9	8	49.3	8	46.7	8	61.8	8	69.8	8	83.0	8	83.8	8	82.3
10	66.2	10	51.7	10	49.3	10	46.7	10	61.3	10	67.4	10	83.0	10	83.7	10	82.2
12	66.1	12	51.7	12	49.3	12	46.1	12	59.2	12	66.3	12	82.8	12	83.5	12	82.2
14	66.1	14	51.7	14	49.3	14	46.0	14	57.1	14	65.3	14	80.7	14	82.8	14	82.2
16	66.1	16	51.7	16	49.3	16	46.0	16	55.7	16	64.4	16	77.3	16	82.3	16	82.2
18	66.0	18	51.7	18	49.3	18	46.0	18	53.7	18	63.8	18	72.2	18	79.5	18	81.7
20	65.9	20	51.7	20	49.3	20	46.0	20	53.5	20	61.8	20	68.3	20	74.5	20	80.2
25	65.4	25	51.7	25	49.2	25	46.0	25	51.2	25	53.6	25	60.3	25	63.0	25	69.0
30	65.3	30	51.7	30	49.2	30	45.9	30	48.5	30	51.1	30	55.5	30	56.8	30	59.3
35	65.2	35	51.7	35	49.2	35	45.9	35	47.6	35	48.8	35	51.2	35	51.8	35	55.0
40	64.4	40	51.6	40	48.9	40	45.8	40	46.7	40	47.6	40	48.8	40	49.2	40	51.3
45	58.5	45	51.6	45	48.9	45	45.8	45	45.8	45	46.3	45	47.4	45	47.7	45	48.7
50	56.2	50	51.6	50	48.8	50	45.8	50	45.4	50	45.8	50	47.0	50	46.8	50	47.3
58	53.3	60	50.7	60	48.2	60	45.8	60	45.2	60	45.6	60	46.7	60	46.3	60	46.7
60	-	70	50.2	70	48.0	70	45.8	70	45.2	70	45.3	70	46.5	65	46.2	61	46.7
		72	-	75	47.8	76	45.8	74	45.1	75	45.2	72	-	67	-	63	-
				77	-	78	-	76	-	77	-						

Depth (ft) and water temperature (° F), Range 7

Nov. 3, 1959 Air temp. 74°		Dec. 7, 1959 Air temp. 45°		Jan. 19, 1960 Air temp. 38°		Feb. 29, 1960 Air temp. 46°		Apr. 18, 1960 Air temp. 72°		May 17, 1960 Air temp. 85°		July 6, 1960 Air temp. 79°		Aug. 2, 1960 Air temp. 91°		Sept. 5, 1960 Air temp. 93°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.8	Surf.	49.2	Surf.	46.6	Surf.	65.5	Surf.	71.9	Surf.	84.8	Surf.	85.0	Surf.	85.6
2	67.0	2	51.8	2	49.3	2	46.6	2	65.2	2	71.7	2	84.4	2	84.2	2	85.3
4	66.9	4	51.8	4	49.2	4	46.2	4	65.0	4	71.3	4	84.3	4	83.9	4	83.6
6	66.5	6	51.8	6	49.2	6	46.2	6	63.8	6	71.2	6	84.3	6	83.7	6	83.0
8	66.0	8	51.8	8	49.2	8	46.1	8	62.2	8	68.8	8	84.2	8	83.5	8	82.8
10	65.7	10	51.8	10	49.2	10	46.0	10	56.7	10	66.3	10	84.2	10	83.3	10	82.7
12	65.5	12	51.8	12	49.2	12	45.9	12	55.3	12	65.8	12	84.2	12	83.2	12	82.6
14	65.5	14	51.7	14	49.2	14	45.9	14	54.0	14	65.3	14	82.5	14	83.1	14	82.4
16	65.5	16	51.7	16	49.2	16	45.9	16	52.9	16	64.8	16	78.0	16	82.2	16	82.3
18	65.5	18	51.7	18	49.2	18	45.9	18	52.3	18	63.8	18	74.5	18	80.2	18	82.2
20	65.4	20	51.6	20	49.2	20	45.9	20	51.0	20	62.2	20	69.8	20	74.0	20	81.5
25	65.3	25	51.5	25	49.2	25	45.9	25	49.4	25	55.0	25	61.2	25	62.0	25	68.8
30	65.3	30	51.5	30	49.2	30	45.8	30	46.8	30	50.8	30	55.3	30	55.8	30	60.7
35	65.2	35	51.5	35	49.2	35	45.8	35	46.0	35	48.7	35	53.2	35	52.0	35	55.0
40	64.3	40	51.4	40	49.2	40	45.8	40	45.3	40	46.7	40	51.7	40	49.2	40	51.0
45	59.0	45	51.3	45	49.2	45	45.8	45	45.2	45	45.9	45	51.2	45	47.8	45	49.4
50	56.8	50	51.3	50	49.2	50	45.8	50	45.1	50	45.8	50	51.0	50	46.8	50	47.5
60	53.0	60	51.0	60	49.2	60	45.8	60	45.0	60	45.7	60	50.8	58	46.4	55	47.2
62	-	63	50.9	64	48.2	70	45.7	70	45.0	69	45.6	63	50.7	60	-	57	-
		65	-	66	-	72	-	72	-	71	-	65	-				

INLAND LAKE—Continued

Depth (ft) and water temperature (° F), Range 8

Nov. 3, 1959 Air temp. 74°		Dec. 7, 1959 Air temp. 44°		Jan. 19, 1960 Air temp. 38°		Feb. 29, 1960 Air temp. 43°		Apr. 18, 1960 Air temp. 72°		May 17, 1960 Air temp. 84°		July 5, 1960 Air temp. 90°		Aug. 2, 1960 Air temp. 94°		Sept. 5, 1960 Air temp. 91°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.7	Surf.	49.7	Surf.	46.4	Surf.	65.7	Surf.	72.2	Surf.	86.0	Surf.	86.2	Surf.	85.3
2	66.8	2	51.7	2	49.7	2	46.4	2	65.2	2	71.5	2	85.8	2	86.0	2	85.2
4	66.4	4	51.6	4	49.7	4	46.4	4	64.0	4	71.3	4	85.7	4	84.5	4	84.8
6	66.1	6	51.6	6	49.7	6	46.4	6	63.8	6	70.8	6	85.4	6	83.8	6	83.2
8	65.8	8	51.6	8	49.7	8	46.3	8	63.7	8	70.3	8	85.2	8	83.6	8	82.9
10	65.8	10	51.5	10	49.7	10	46.3	10	58.0	10	69.9	10	84.3	10	83.2	10	82.7
12	65.7	12	51.5	12	49.7	12	46.3	12	54.5	12	66.7	12	84.2	12	83.0	12	82.4
14	65.7	14	51.5	14	49.6	14	46.3	14	52.9	14	65.5	14	82.8	14	82.8	14	82.2
16	65.7	16	51.5	16	49.6	16	46.3	16	52.1	16	65.0	16	75.2	16	82.6	16	82.2
18	65.7	18	51.5	18	49.6	18	46.3	18	51.1	18	63.8	18	71.5	18	81.2	18	81.4
20	65.7	20	51.5	20	49.6	20	46.3	20	50.7	20	62.0	20	68.7	20	73.0	20	80.3
25	65.6	25	51.4	25	49.6	25	46.2	25	47.7	25	55.2	25	60.8	25	62.2	25	70.2
30	65.5	30	51.4	30	49.5	30	46.0	30	47.0	30	50.3	30	55.7	30	55.8	30	59.2
35	65.0	35	51.3	35	49.5	35	45.9	35	45.8	35	48.7	35	51.3	35	51.3	35	55.3
40	63.3	40	51.3	40	49.3	40	45.8	40	45.4	40	46.6	40	49.0	40	49.2	40	52.4
45	58.2	45	51.2	45	49.3	45	45.3	45	45.3	45	46.3	45	47.8	45	48.0	45	50.2
50	57.2	50	50.3	50	49.3	50	44.9	50	45.2	50	46.2	50	47.8	50	47.8	49	49.8
52	57.0	51	50.3	56	48.7	60	44.8	60	45.2	60	46.0	57	47.8	54	47.8	51	-
54	-	53	-	58	-	65	44.8	65	45.2	63	46.0	59	-	56	-		
						67	-	67	-	65	-						

Depth (ft) and water temperature (° F), Range 9

Nov. 3, 1959 Air temp. 74°		Dec. 7, 1959 Air temp. 43°		Jan. 19, 1960 Air temp. 37°		Feb. 29, 1960 Air temp. 44°		Apr. 18, 1960 Air temp. 72°		May 17, 1960 Air temp. 83°		July 5, 1960 Air temp. 90°		Aug. 1, 1960 Air temp. 95°		Sept. 5, 1960 Air temp. 92°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.5	Surf.	49.5	Surf.	46.7	Surf.	66.5	Surf.	74.1	Surf.	86.2	Surf.	87.5	Surf.	85.0
2	66.5	2	51.4	2	49.6	2	46.6	2	66.2	2	73.1	2	86.0	2	87.3	2	84.8
4	66.2	4	51.3	4	49.6	4	46.5	4	66.2	4	72.2	4	84.7	4	87.2	4	83.2
6	66.1	6	51.2	6	49.6	6	46.5	6	65.7	6	69.9	6	84.4	6	86.7	6	82.8
8	66.0	8	51.1	8	49.5	8	46.3	8	64.8	8	67.3	8	84.2	8	84.2	8	82.7
10	66.0	10	50.9	10	49.5	10	46.2	10	56.5	10	66.1	10	84.0	10	83.4	10	82.2
12	66.0	12	50.8	12	49.5	12	45.9	12	53.9	12	65.6	12	82.8	12	82.8	12	82.2
14	65.9	14	50.5	14	49.2	14	45.7	14	53.0	14	64.7	14	80.8	14	82.2	14	82.0
16	65.6	16	50.1	16	49.2	16	45.5	16	51.4	16	64.3	16	78.7	16	81.7	16	81.7
18	65.5	18	50.0	18	49.2	18	45.3	18	50.9	18	64.0	18	73.9	18	80.7	18	80.2
20	65.5	20	49.8	20	49.2	20	45.2	20	49.5	20	63.0	20	69.3	20	75.0	20	80.2
25	65.4	25	49.7	25	49.2	25	45.2	25	47.8	25	53.2	25	59.8	25	62.8	25	70.0
30	65.3	30	49.5	30	49.0	30	44.7	30	46.6	30	52.0	30	54.7	30	57.2	27	64.8
31	65.3	35	48.8	35	49.0	35	44.5	35	46.2	35	50.0	35	51.3	31	55.7	29	-
33	-	37	-	40	48.8	40	44.3	40	46.2	40	47.9	37	-	33	-		
				42	-	41	44.3	42	-	42	-						
						43	-										

INLAND LAKE—Continued

Depth (ft) and water temperature (° F), Range 10

Nov. 3, 1959 Air temp. 76°		Dec. 7, 1959 Air temp. 43°		Jan. 19, 1960 Air temp. 37°		Feb. 29, 1960 Air temp. 47°		Apr. 18, 1960 Air temp. 72°		May 17, 1960 Air temp. 81°		July 5, 1960 Air temp. 92°		Aug. 1, 1960 Air temp. 97°		Sept. 5, 1960 Air temp. 92°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	50.2	Surf.	48.8	Surf.	46.3	Surf.	65.6	Surf.	72.7	Surf.	86.8	Surf.	88.8	Surf.	86.4
2	66.6	2	50.2	2	49.0	2	46.2	2	65.5	2	72.5	2	86.1	2	88.4	2	85.3
4	65.9	4	50.1	4	47.8	4	46.2	4	65.0	4	72.3	4	85.8	4	84.7	4	83.8
6	65.4	6	50.0	6	49.2	6	46.2	6	64.2	6	72.1	6	85.3	6	83.8	6	83.2
8	65.3	8	49.9	8	48.9	8	46.1	8	59.2	8	68.5	8	85.0	8	83.4	8	82.3
10	65.1	10	49.9	10	48.9	10	46.0	10	56.7	10	66.6	10	84.7	10	83.2	10	82.1
12	64.9	12	49.8	12	49.0	12	45.8	12	53.5	12	66.0	12	84.2	12	83.0	12	81.3
13	64.8	14	49.3	14	48.7	14	45.7	14	52.4	14	64.3	14	83.7	14	82.7	14	80.9
15	-	16	49.2	16	48.7	16	45.6	16	51.8	16	64.0	16	75.8	16	82.1	16	80.2
		18	48.2	18	48.2	18	45.4	18	50.5	18	62.9	18	72.5	18	80.8	18	-
		20	-	20	47.5	20	45.1	20	49.7	20	60.3	20	67.2	20	71.5		
				25	47.4	25	44.7	25	47.7	25	53.0	22	-	22	-		
				28	47.3	30	44.1	30	47.4	30	50.8						
				30	-	32	-	32	-	32	-						

Depth (ft) and water temperature (° F), Range 11

Nov. 3, 1959 Air temp. 75°		Dec. 7, 1959 Air temp. 41°		Jan. 19, 1960 Air temp. 36°		Feb. 29, 1960 Air temp. 49°		Apr. 18, 1960 Air temp. 71°		May 17, 1960 Air temp. 81°		July 5, 1960 Air temp. 90°		Aug. 1, 1960 Air temp. 99°		Sept. 5, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	48.6	Surf.	48.0	Surf.	45.7	Surf.	65.2	Surf.	73.0	Surf.	86.8	Surf.	89.7	Surf.	88.8
2	65.7	2	48.5	2	48.2	2	45.8	2	65.0	2	72.8	2	86.7	2	89.2	2	85.8
4	65.1	4	48.4	4	48.0	4	45.6	4	64.7	4	72.3	4	86.2	4	85.5	4	82.0
6	64.4	6	48.1	6	47.5	6	45.6	6	60.5	6	72.2	6	86.2	6	84.0	5	80.4
8	62.4	8	47.1	8	47.2	8	45.5	8	58.7	8	72.2	8	86.2	8	83.4	7	-
10	59.6	10	46.0	10	47.2	10	45.4	10	56.7	10	71.6	10	85.7	10	82.4		
12	-	11	45.6	12	46.9	12	45.2	12	54.2	12	68.0	12	84.1	11	81.5		
		13	-	14	46.6	14	44.7	14	53.3	14	64.5	14	-	13	-		
				16	46.6	16	44.5	16	52.8	16	60.2						
				18	46.6	18	44.3	18	52.4	18	58.2						
				20	46.6	20	44.2	20	51.8	19	57.8						
				22	-	22	-	22	-	21	-						

LAY LAKE

Depth (ft) and water temperature (° F), Range 1

Oct. 19, 1959 (Air temp. 78°)						Dec. 1, 1959 (Air temp. 59°)						Jan. 12, 1960 (Air temp. 68°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	51.2	Surf.	50.6	Surf.	49.0
2	74.3	2	73.8	2	73.9	2	51.7	2	51.5	2	51.0	2	49.0	2	49.0	2	48.2
4	74.0	4	73.1	4	73.6	4	51.3	4	51.2	4	50.9	4	48.8	4	48.7	4	48.1
6	73.9	6	73.2	6	73.5	6	51.3	6	51.2	6	50.9	6	48.5	6	48.5	6	47.8
8	73.8	8	72.8	8	73.4	8	51.3	8	51.2	8	50.9	8	48.5	8	48.4	8	48.0
10	73.7	10	73.3	10	73.4	10	51.3	10	51.2	10	50.9	10	48.2	10	48.0	10	47.5
12	73.6	12	73.4	12	73.4	12	51.3	12	51.2	12	50.9	12	47.9	12	47.9	12	47.5
14	73.5	14	73.4	14	73.4	14	51.3	14	51.2	14	50.9	14	47.6	14	47.7	14	47.4
16	73.5	16	73.4	16	73.3	16	51.2	16	51.2	16	50.9	16	47.5	16	47.6	16	47.4
18	73.5	18	73.2	18	73.3	18	51.2	18	51.2	18	50.9	18	47.4	18	47.6	18	47.4
20	73.5	20	73.4	20	73.2	20	51.2	20	51.2	20	50.8	20	47.3	20	47.5	20	47.3
25	73.5	25	73.2	25	73.2	25	51.2	25	51.1	25	50.8	25	47.3	25	47.4	25	47.3
30	73.5	30	73.2	30	73.2	30	51.2	30	51.1	30	50.8	30	47.3	30	47.2	30	47.3
35	73.1	35	73.1	35	73.1	35	51.2	35	51.0	35	50.8	35	47.0	35	47.1	35	47.2
40	72.5	40	73.0	40	73.1	40	51.2	40	51.0	40	50.8	40	47.0	40	47.1	40	47.2
45	72.4	45	73.0	45	73.0	45	51.2	45	51.1	45	50.7	45	47.0	45	47.0	45	47.1
		50	72.9	50	72.8	47	51.2	50	51.0	50	50.7	50	47.0	50	47.0	50	47.0
		60	72.5	60	72.6	49	-	60	50.9	60	50.6	60	46.9	60	46.8	60	47.0
		68	72.5	64	72.4			62	50.9	62	50.6			66	46.8	67	47.0
								64	-	64	-						

Feb. 23, 1960 (Air temp. 56°)						Apr. 12, 1960 (Air temp. 75°)						May 24, 1960 (Air temp. 93°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	47.2	Surf.	46.3	Surf.	49.2	Surf.	61.9	Surf.	63.4	Surf.	63.2	Surf.	83.8	Surf.	84.8	Surf.	84.4
2	47.0	2	46.2	2	46.2	2	59.4	2	60.4	2	61.6	2	82.6	2	83.7	2	82.9
4	46.9	4	46.2	4	46.1	4	59.0	4	59.0	4	59.2	4	82.3	4	82.0	4	81.0
6	46.8	6	46.2	6	46.1	6	58.9	6	59.0	6	59.2	6	81.4	6	81.0	6	80.6
8	46.7	8	46.2	8	46.0	8	58.8	8	58.9	8	59.0	8	80.6	8	80.8	8	80.2
10	46.6	10	46.2	10	46.0	10	58.8	10	58.8	10	59.0	10	79.2	10	80.0	10	79.8
12	46.5	12	46.2	12	46.0	12	58.7	12	58.8	12	58.9	12	77.3	12	77.8	12	78.0
14	46.5	14	46.2	14	46.0	14	58.7	14	58.8	14	58.7	14	76.7	14	77.7	14	77.3
16	46.5	16	46.2	16	46.0	16	58.7	16	58.7	16	58.7	16	76.4	16	77.2	16	76.3
18	46.5	18	46.2	18	46.0	18	58.7	18	58.7	18	58.7	18	75.1	18	76.3	18	76.2
20	46.3	20	46.2	20	46.0	20	58.7	20	58.7	20	58.7	20	75.3	20	75.4	20	75.7
25	46.2	25	46.2	25	46.0	25	58.7	25	58.7	25	58.6	25	74.7	25	74.7	25	74.5
30	46.2	30	46.2	30	46.0	30	58.6	30	58.7	30	58.4	30	73.7	30	73.2	30	73.7
35	46.2	35	46.2	35	46.0	35	58.4	35	58.5	35	58.2	35	72.1	35	71.6	35	71.6
40	46.2	40	46.2	40	46.0	40	58.2	40	58.3	40	58.1	40	71.0	40	70.2	40	70.7
45	46.2	45	46.2	45	46.0	45	57.9	45	58.1	45	58.0	45	69.7	45	69.7	45	69.6
50	46.2	50	46.2	50	46.0	50	57.8	50	57.9	50	58.0	50	69.2	50	68.9	50	68.4
57	46.2	60	46.2	60	46.0	52	-	60	57.8	60	57.9	54	68.4	60	67.8	60	67.8
		68	46.2	69	46.0			64	57.7	65	57.9			64	67.3	64	67.5
								66	-	67	-						

LAY LAKE—Continued

Depth (ft) and water temperature (° F), Range 1—Continued

June 22, 1960 (Air temp. 92°)						July 25, 1960 (Air temp. 96°)						Aug. 30, 1960 (Air temp. 84°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	86.5	Surf.	85.6	Surf.	85.8	Surf.	90.6	Surf.	89.9	Surf.	89.5	Surf.	86.3	Surf.	86.2	Surf.	85.3
2	85.2	2	85.1	2	85.4	2	88.3	2	88.2	2	88.8	2	86.2	2	86.1	2	85.2
4	84.0	4	83.7	4	84.3	4	87.8	4	87.2	4	88.2	4	86.1	4	85.8	4	85.2
6	83.7	6	83.7	6	83.4	6	86.8	6	86.8	6	87.5	6	85.8	6	85.5	6	85.0
8	83.3	8	83.7	8	83.2	8	86.4	8	86.8	8	86.8	8	85.2	8	85.2	8	85.0
10	83.2	10	83.2	10	83.2	10	86.4	10	86.7	10	86.4	10	84.7	10	85.6	10	84.8
12	82.8	12	83.1	12	83.0	12	86.3	12	86.4	12	86.3	12	84.2	12	84.7	12	84.2
14	82.8	14	82.7	14	82.8	14	86.2	14	86.4	14	86.3	14	84.0	14	84.3	14	83.8
16	82.7	16	82.7	16	82.7	16	86.2	16	86.3	16	86.3	16	83.8	16	84.9	16	83.6
18	82.6	18	82.6	18	82.7	18	86.2	18	86.3	18	86.2	18	83.8	18	83.7	18	83.5
20	82.4	20	82.3	20	82.2	20	86.2	20	86.3	20	86.2	20	83.6	20	83.5	20	83.3
25	82.2	25	82.2	25	82.0	25	86.1	25	86.1	25	86.2	25	83.4	25	83.4	25	83.2
30	81.9	30	81.9	30	81.8	30	86.0	30	85.9	30	85.8	30	83.3	30	83.3	30	83.2
35	81.8	35	81.8	35	81.8	35	85.9	35	85.8	35	85.7	35	83.3	35	83.3	35	83.1
40	81.7	40	81.7	40	81.8	40	85.8	40	85.7	40	85.7	40	83.3	40	83.3	40	83.1
45	81.7	45	81.7	45	81.7	45	85.7	45	85.6	45	85.2	45	83.2	45	83.2	45	83.0
50	81.6	50	81.6	50	81.4	50	85.7	50	85.6	50	85.2	50	83.2	50	83.2	50	82.9
60	81.3	60	81.2	60	81.2	60	85.2	60	85.3	60	85.2	60	83.1	60	83.2	60	82.8
62	81.0	63	80.7	70	76.0	62	85.0	64	85.0	69	84.6	61	83.1	64	82.8	69	82.7
64	-	65	-	73	72.7												
				75	-												

Depth (ft) and water temperature (°F), Range 2

Oct. 19, 1959 Air temp. 78°		Dec. 1, 1959 Air temp. 60°		Jan. 12, 1960 Air temp. 61°		Feb. 23, 1960 Air temp. 51°		Apr. 12, 1960 Air temp. 73°		May 24, 1960 Air temp. 93°		June 22, 1960 Air temp. 94°		July 25, 1960 Air temp. 98°		Aug. 30, 1960 Air temp. 89°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	48.7	Surf.	46.8	Surf.	62.4	Surf.	85.2	Surf.	85.7	Surf.	93.0	Surf.	85.8
2	74.2	2	51.6	2	48.3	2	46.8	2	59.2	2	83.2	2	85.2	2	89.6	2	85.8
4	73.7	4	51.1	4	47.8	4	46.7	4	58.5	4	81.0	4	84.3	4	88.1	4	85.4
6	73.4	6	50.6	6	47.8	6	46.7	6	58.4	6	80.0	6	84.2	6	87.2	6	85.2
8	73.3	8	50.2	8	47.7	8	46.6	8	58.3	8	78.8	8	84.0	8	86.8	8	84.6
10	73.2	10	50.1	10	47.6	10	46.6	10	58.3	10	78.4	10	84.0	10	86.3	10	84.1
12	73.2	12	50.0	12	47.5	12	46.6	12	58.1	12	78.1	12	84.0	12	86.2	12	84.0
14	73.2	14	50.0	14	47.5	14	46.6	14	58.0	14	77.9	14	83.8	14	86.2	14	83.8
16	73.1	16	49.9	16	47.5	16	46.6	16	57.9	16	76.7	16	83.1	16	86.1	16	83.8
18	73.1	18	49.7	18	47.5	18	46.6	18	57.8	18	75.9	18	82.5	18	86.1	18	83.8
20	73.0	20	49.7	20	47.5	20	46.6	20	57.7	20	75.5	20	82.4	20	85.9	20	83.7
25	72.8	25	49.5	25	47.5	25	46.6	25	57.7	25	74.4	25	82.2	25	85.8	25	83.7
30	72.4	30	49.4	30	47.5	30	46.6	30	57.6	30	73.3	30	82.0	30	85.8	30	83.4
35	72.5	35	49.2	35	47.5	35	46.6	35	57.6	35	72.2	35	81.9	35	85.8	35	83.3
40	72.1	40	49.2	40	47.5	40	46.6	40	57.6	40	71.2	40	81.7	40	85.7	40	83.2
45	71.8	45	49.2	45	47.5	45	46.6	45	57.5	45	69.4	45	81.4	45	85.5	45	83.0
50	71.7	47	49.1	50	47.5	50	46.6	50	57.4	50	68.8	50	81.3	50	85.3	50	82.8
51	71.7			52	47.5	58	46.5	52	57.3	51	67.8	51	81.0	51	85.3	51	83.8
								54	-			53	-				

LAY LAKE—Continued

Depth (ft) and water temperature (° F), Range 3

Oct. 19, 1959 (Air temp. 83°)						Dec. 1, 1959 (Air temp. 58°)						Jan. 12, 1960 (Air temp. 63°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	51.5	Surf.	49.2	Surf.	47.8
2	75.1	2	74.0	2	74.5	2	50.3	2	50.5	2	50.3	2	51.1	2	48.9	2	47.7
4	74.0	4	73.0	4	71.8	4	50.3	4	50.4	4	50.0	4	50.4	4	48.7	4	47.6
6	72.7	6	71.8	6	71.6	6	50.2	6	50.1	6	50.0	6	50.0	6	48.5	6	47.5
8	72.4	8	71.5	8	71.1	8	50.1	8	49.8	8	49.9	8	49.4	8	48.3	8	47.5
10	72.1	10	71.4	10	71.0	10	49.5	10	49.7	10	49.9	10	47.5	10	47.5	10	47.4
12	72.0	12	71.3	12	70.9	12	49.5	12	49.7	12	49.8	12	47.5	12	47.4	12	47.4
14	71.8	14	71.2	14	70.8	14	49.5	14	49.7	14	49.7	14	47.5	14	47.4	14	47.4
16	71.7	16	70.8	16	70.8	16	49.5	16	49.7	16	49.7	16	47.5	16	47.4	16	47.4
18	71.2	18	70.7	18	70.7	18	49.5	18	49.7	18	49.6	18	47.5	18	47.4	18	47.4
20	70.7	20	70.6	20	70.7	20	49.5	20	49.7	20	49.5	20	47.5	20	47.4	20	47.4
25	70.6	25	70.5	25	70.6	25	49.5	25	49.6	25	49.5	25	47.5	25	47.4	25	47.4
30	70.5	29	70.5	30	70.5	27	49.4	30	49.6	30	49.5	30	47.5	30	47.3	30	47.4
				35	70.5	29	-	31	49.6	35	49.5			33	47.3	35	47.4
				37	70.5			33	-	37	49.5					37	47.4
										39	-						

Feb. 23, 1960 (Air temp. 53°)						Apr. 12, 1960 (Air temp. 74°)						May 24, 1960 (Air temp. 94°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	47.7	Surf.	48.0	Surf.	48.4	Surf.	64.0	Surf.	62.0	Surf.	61.6	Surf.	85.3	Surf.	85.0	Surf.	85.3
2	46.8	2	47.6	2	47.3	2	63.4	2	61.2	2	61.2	2	85.2	2	84.5	2	84.0
4	46.7	4	47.1	4	47.2	4	62.0	4	60.2	4	60.0	4	80.4	4	80.3	4	82.2
6	46.7	6	46.8	6	47.2	6	61.1	6	58.6	6	57.6	6	78.8	6	75.2	6	78.3
8	46.7	8	46.8	8	47.0	8	60.0	8	58.1	8	57.3	8	78.6	8	78.7	8	78.2
10	46.7	10	46.7	10	46.9	10	59.8	10	58.0	10	57.2	10	78.3	10	78.3	10	77.2
12	46.7	12	46.7	12	46.9	12	59.4	12	57.8	12	57.2	12	77.8	12	77.7	12	77.5
14	46.7	14	46.7	14	46.9	14	59.2	14	57.3	14	57.2	14	77.7	14	77.4	14	77.3
16	46.7	16	46.7	16	46.8	16	58.4	16	57.3	16	57.2	16	77.3	16	77.1	16	76.7
18	46.6	18	46.7	18	46.8	18	57.2	18	57.2	18	57.2	18	75.8	18	76.8	18	76.5
20	46.6	20	46.6	20	46.8	20	57.2	20	57.2	20	57.2	20	75.7	20	76.0	20	76.2
25	46.6	25	46.6	25	46.7	25	57.2	25	57.2	25	57.2	25	74.7	25	75.2	25	75.9
30	46.6	30	46.6	30	46.6	30	57.2	30	57.2	30	57.2	30	73.3	30	73.7	30	72.9
34	46.6	35	46.6	35	46.5	31	57.2	32	57.2	35	57.2			33	72.2	35	71.2
				40	46.2	33	-	34	-	40	57.2					40	69.7
				41	46.2					41	57.2						
										43	-						

LAY LAKE—Continued

Depth (ft) and water temperature (°F), Range 3—Continued

June 22, 1960 (Air temp. 92°)						July 25, 1960 (Air temp. 98°)						August 30, 1960 (Air temp. 90°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	87.2	Surf.	87.0	Surf.	86.6	Surf.	90.7	Surf.	91.7	Surf.	92.2	Surf.	85.0	Surf.	85.3	Surf.	85.6
2	87.0	2	86.8	2	86.5	2	88.3	2	90.5	2	91.4	2	84.8	2	85.1	2	85.3
4	86.3	4	85.5	4	85.8	4	87.3	4	87.7	4	91.2	4	84.5	4	84.8	4	85.2
6	86.2	6	84.6	6	84.3	6	86.7	6	87.7	6	87.2	6	84.2	6	84.3	6	85.1
8	85.2	8	84.5	8	84.0	8	86.2	8	87.3	8	86.7	8	84.0	8	84.2	8	84.8
10	84.7	10	84.2	10	83.8	10	85.8	10	86.3	10	86.2	10	83.8	10	83.8	10	84.7
12	84.4	12	84.2	12	83.8	12	85.8	12	86.2	12	86.1	12	83.8	12	84.0	12	84.7
14	84.3	14	84.1	14	83.7	14	85.8	14	86.0	14	86.1	14	83.7	14	84.0	14	84.7
16	83.2	16	83.6	16	83.6	16	85.8	16	85.9	16	86.0	16	83.7	16	83.6	16	84.3
18	82.1	18	83.0	18	83.3	18	85.8	18	85.8	18	86.0	18	83.3	18	83.6	18	84.3
20	82.0	20	82.5	20	83.2	20	85.7	20	85.7	20	86.0	20	83.3	20	83.3	20	83.5
25	81.8	25	82.2	25	82.7	25	85.7	25	85.6	25	85.7	25	83.2	25	83.2	25	83.3
30	81.8	30	82.2	30	82.3	30	85.5	30	85.5	30	85.7	30	82.8	30	83.2	30	83.3
31	81.7	33	81.8	35	82.1	31	85.2	34	85.3	35	85.5	31	82.8	34	83.0	35	83.0
33	-	35	-	40	81.7					39	85.3					40	82.4
				41	81.6											41	82.4
				43	-												

Depth (ft) and water temperature (° F), Range 4

Oct. 19, 1959 Air temp. 82°		Dec. 1, 1959 Air temp. 57°		Jan. 13, 1960 Air temp. 58°		Feb. 23, 1960 Air temp. 52°		Apr. 12, 1960 Air temp. 73°		May 24, 1960 Air temp. 92°		June 22, 1960 Air temp. 92°		July 25, 1960 Air temp. 92°		Aug. 30, 1960 Air temp. 90°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.1	Surf.	47.9	Surf.	62.2	Surf.	84.3	Surf.	87.6	Surf.	92.8	Surf.	86.2
2	73.9	2	49.9	2	49.7	2	47.2	2	62.0	2	83.5	2	87.5	2	89.6	2	85.8
4	73.4	4	49.9	4	49.6	4	47.0	4	61.8	4	83.2	4	87.2	4	87.3	4	84.7
6	72.8	6	49.9	6	49.5	6	47.0	6	61.7	6	81.2	6	86.8	6	86.9	6	84.4
8	72.2	8	49.9	8	49.4	8	47.0	8	61.4	8	80.0	8	86.0	8	86.5	8	83.7
10	71.0	10	49.8	10	49.3	10	46.8	10	60.1	10	78.5	10	85.7	10	86.2	10	83.4
12	70.8	12	49.7	12	49.1	12	46.8	12	57.9	12	78.1	12	85.7	12	85.9	12	83.4
14	70.8	14	49.6	14	49.0	14	46.7	14	57.5	14	78.0	14	84.8	14	85.7	14	83.4
16	70.7	16	49.5	16	49.0	16	46.7	16	57.4	16	77.2	16	82.7	16	85.5	16	82.8
18	70.7	18	49.5	18	49.0	18	46.7	18	57.4	18	76.1	18	82.3	18	85.3	18	83.3
20	70.6	20	49.5	20	49.0	20	46.7	20	57.3	20	75.6	20	82.2	20	85.3	20	83.3
25	70.6	25	49.4	25	49.0	25	46.6	25	57.3	25	75.2	25	82.1	25	85.3	25	83.2
30	70.2	30	49.4	30	49.0	30	46.6	30	57.3	30	73.0	30	82.0	30	85.3	30	82.4
		32	-	31	49.0	33	46.6	33	57.3	32	71.0	32	81.9	31	85.2	32	82.2
								35	-			34	-				

LAY LAKE—Continued

Depth (ft) and water temperature (° F), Range 5

Oct. 19, 1959 (Air temp. 85°)						Dec. 2, 1959 (Air temp. 49°)						Jan. 13, 1960 (Air temp. 59°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	-	Surf.	50.8	Surf.	50.1	Surf.	50.1
2	72.6	2	72.1	2	71.0	2	48.9	2	48.7	2	48.6	2	50.0	2	49.4	2	49.6
4	72.3	4	71.6	4	70.6	4	48.9	4	48.7	4	48.6	4	50.3	4	49.4	4	49.3
6	72.1	6	71.2	6	70.5	6	48.9	6	48.8	6	48.5	6	50.3	6	49.4	6	49.2
8	71.9	8	70.5	8	70.4	8	48.9	8	48.8	8	48.5	8	50.3	8	49.4	8	49.2
10	71.7	10	70.4	10	70.4	10	48.9	10	48.8	10	48.5	10	50.4	10	49.4	10	49.2
12	71.5	12	70.3	12	70.4	12	48.9	12	48.8	12	48.5	12	50.7	12	49.4	12	49.2
14	70.6	14	70.3	14	70.4	14	48.9	14	48.8	14	48.5	13	50.5	14	49.4	14	49.2
		16	70.3	16	70.5			16	48.8	16	48.5			16	49.7	16	49.2
		18	70.3	18	70.4			18	48.8	18	48.5			18	49.5	18	49.2
		20	70.3	20	70.3			20	48.8	20	48.4			20	49.5	20	49.2
		22	70.3	25	70.3			22	-	25	48.3			21	49.5	25	49.1
				26	70.3					27	-					26	49.1

Feb. 24, 1960 (Air temp. 46°)						Apr. 13, 1960 (Air temp. 67°)						May 24, 1960 (Air temp. 91°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	47.2	Surf.	47.3	Surf.	47.4	Surf.	60.9	Surf.	60.8	Surf.	60.2	Surf.	84.1	Surf.	82.9	Surf.	80.8
2	46.9	2	46.9	2	47.2	2	58.6	2	58.6	2	58.7	2	83.6	2	82.7	2	77.2
4	46.8	4	46.8	4	47.2	4	58.4	4	58.5	4	58.6	4	81.5	4	80.5	4	77.0
6	46.8	6	46.8	6	47.2	6	58.3	6	58.5	6	58.5	6	80.6	6	79.3	6	76.6
8	46.8	8	46.8	8	47.2	8	58.3	8	58.5	8	58.5	8	79.5	8	77.4	8	76.6
10	46.8	10	46.8	10	47.2	10	58.3	10	58.4	10	58.5	10	78.0	10	76.3	10	76.3
12	46.8	12	46.8	12	47.2	12	58.2	12	58.3	12	58.5	12	76.7	12	75.9	12	76.3
14	46.8	14	46.8	14	47.2	14	58.2	14	58.3	14	58.5	14	76.2	14	75.7	14	76.3
		16	46.8	16	47.2	16	-	16	58.2	16	58.5	15	76.2	16	75.6	16	76.3
		18	46.8	18	47.2			18	58.2	18	58.2			18	75.6	18	75.8
		20	46.8	20	47.2			20	58.2	20	58.0			20	75.5	20	75.7
		21	46.8	25	47.2			22	-	25	57.8			22	74.9	25	73.5
				28	47.2					27	57.3					26	73.2
										29	-						

LAY LAKE—Continued

Depth (ft) and water temperature (° F), Range 5—Continued

June 22, 1960 (Air temp. 91°)						July 25, 1960 (Air temp. 90°)						Aug. 30, 1960 (Air temp. 92°)					
Left		Middle		Right		Left		Middle		Right		Left		Middle		Right	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	87.8	Surf.	86.7	Surf.	85.6	Surf.	90.0	Surf.	90.2	Surf.	91.3	Surf.	87.2	Surf.	87.8	Surf.	87.0
2	87.7	2	86.7	2	85.8	2	89.8	2	89.5	2	90.2	2	86.3	2	86.7	2	86.7
4	87.7	4	86.3	4	85.7	4	89.4	4	87.7	4	86.5	4	84.4	4	85.4	4	86.2
6	87.0	6	86.0	6	85.3	6	86.7	6	87.2	6	86.4	6	83.8	6	84.3	6	86.2
8	86.5	8	85.7	8	84.8	8	85.8	8	86.2	8	86.4	8	83.7	8	84.1	8	85.8
10	85.7	10	84.7	10	82.8	10	85.7	10	85.8	10	86.3	10	83.7	10	84.1	10	84.7
12	82.4	12	83.1	12	82.7	12	85.6	12	85.8	12	85.8	12	83.5	12	83.9	12	85.0
13	82.3	14	82.4	14	82.7	14	85.6	14	85.7	14	85.7	14	83.3	14	83.9	14	84.7
15	-	16	82.2	16	82.6	15	85.3	16	85.6	16	85.7			16	83.8	16	84.3
		18	82.0	18	82.3			18	85.6	18	85.6			18	83.7	18	84.0
		20	82.0	20	82.3			20	85.6	20	85.3			20	83.3	20	83.4
		22	82.0	25	82.3			21	85.5	25	85.3			22	82.8	25	82.5
		24	-	26	82.3					27	85.2					26	81.8
				28	-												

Depth (ft) and water temperature (°F), Range 6

Oct. 19, 1959 Air temp. 85°		Dec. 2, 1959 Air temp. 50°		Jan. 13, 1960 Air temp. 61°		Feb. 24, 1960 Air temp. 54°		Apr. 13, 1960 Air temp. 67°		May 25, 1960 Air temp. 82°		June 23, 1960 Air temp. 85°		July 26, 1960 Air temp. 94°		Aug. 30, 1960 Air temp. 95°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.5	Surf.	48.4	Surf.	60.3	Surf.	79.0	Surf.	85.4	Surf.	87.8	Surf.	88.7
2	71.7	2	49.2	2	50.0	2	46.8	2	58.8	2	79.0	2	85.2	2	86.7	2	86.7
4	71.5	4	49.2	4	49.1	4	46.8	4	58.7	4	78.3	4	85.2	4	86.3	4	86.2
6	71.0	6	49.2	6	49.2	6	46.7	6	58.6	6	78.2	6	85.2	6	87.2	6	85.7
8	70.9	8	49.2	8	49.1	8	46.7	8	58.4	8	77.7	8	85.0	8	87.2	8	85.3
10	70.9	10	49.1	10	49.0	10	46.7	10	58.4	10	77.7	10	84.7	10	87.0	10	84.7
12	70.9	12	49.1	12	49.3	12	46.6	12	58.4	12	77.6	12	84.5	12	87.0	12	84.0
14	70.9	14	49.0	14	49.1	14	46.6	14	58.3	14	77.5	14	83.8	14	87.0	14	84.0
16	70.9	16	49.0	16	49.0	16	46.5	16	58.3	16	77.4	16	83.1	16	86.7	16	83.8
18	70.7	18	49.0	18	49.0	18	46.5	18	58.3	18	77.2	18	83.0	18	86.6	18	83.8
20	70.6	20	49.0	20	49.0	20	46.5	20	58.3	20	76.6	20	82.9	20	86.3	20	83.8
25	70.6	25	49.0	25	49.1	25	46.4	25	58.2	25	76.3	25	82.8	25	85.8	25	83.7
30	70.6	30	49.0	30	49.1	30	46.4	30	58.2	30	75.8	30	82.7	30	85.7	30	83.7
35	70.5	35	49.0	35	49.0	35	46.4	35	58.2	35	75.7	35	82.5	35	85.7	35	83.7
40	70.4	40	49.0	40	48.9	40	46.4	40	58.2	40	75.6	40	82.4	40	85.5	40	83.7
45	70.4	45	49.0	45	48.9	45	46.4	45	58.2	45	75.5	45	82.3	45	85.5	45	83.7
50	70.3	50	49.0	50	48.9	50	46.4	50	58.2	50	75.4	50	82.2	50	85.5	50	83.5
60	70.3	60	49.0	60	48.9	60	46.4	60	58.1	60	75.2	60	82.1	60	85.5	60	83.5
70	70.2	70	49.0	70	48.9	70	46.6	70	58.1	70	74.4	70	82.1	70	85.5	70	83.5
80	70.2	80	49.0	80	48.9	80	46.6	80	58.1	80	71.8	80	82.1	80	85.5	80	83.4
90	70.2	87	49.0	85	48.9	90	46.6	90	58.1	85	71.7	90	82.1	90	85.3	86	83.3
92	70.2	89	-			91	46.6	91	58.1			92	82.1	96	85.3		
								93	-			94	-				

LAY LAKE—Continued

Depth (ft) and water temperature (°F), Range 7

Oct. 20, 1959 Air temp. 73°		Dec. 2, 1959 Air temp. 50°		Jan. 13, 1960 Air temp. 58°		Feb. 24, 1960 Air temp. 58°		Apr. 13, 1960 Air temp. 70°		May 25, 1960 Air temp. 83°		June 23, 1960 Air temp. 85°		July 26, 1960 Air temp. 94°		Aug. 30, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	49.8	Surf.	46.8	Surf.	60.0	Surf.	79.3	Surf.	85.3	Surf.	89.7	Surf.	90.4
2	69.8	2	49.0	2	49.7	2	46.6	2	58.8	2	79.1	2	85.1	2	88.2	2	89.7
4	69.7	4	49.0	4	49.5	4	46.6	4	58.7	4	78.8	4	85.0	4	87.6	4	88.7
6	69.6	6	49.0	6	49.6	6	46.6	6	58.6	6	78.2	6	84.8	6	87.6	6	86.7
8	69.5	8	48.9	8	49.5	8	46.5	8	58.5	8	77.8	8	84.7	8	87.4	8	84.3
10	69.5	10	48.9	10	49.4	10	46.5	10	58.3	10	77.6	10	84.5	10	87.0	10	84.8
12	69.4	12	48.9	12	49.5	12	46.5	12	58.2	12	77.2	12	84.3	12	86.5	12	83.9
14	69.4	14	48.8	14	49.5	14	46.5	14	58.2	14	77.0	14	84.0	14	86.3	14	83.7
16	69.3	16	48.8	16	49.5	16	46.5	16	58.2	16	76.7	16	82.7	16	86.2	16	83.6
18	69.3	18	48.8	18	49.5	18	46.5	18	58.3	18	76.5	18	82.4	18	86.1	18	83.6
20	69.3	20	48.9	20	49.4	20	46.5	20	58.2	20	76.2	20	82.2	20	85.9	20	83.2
25	69.2	25	48.9	25	49.3	25	46.5	25	58.2	25	75.8	25	82.0	25	85.8	25	83.3
30	69.2	30	48.9	30	49.2	30	46.4	30	58.2	30	75.3	30	82.0	30	85.7	30	83.3
35	69.2	35	49.0	35	49.2	35	46.4	35	58.2	35	74.7	35	82.0	35	85.3	35	83.3
40	69.1	40	49.1	40	49.2	40	46.4	40	58.2	40	74.7	40	81.9	40	85.3	40	83.3
43	69.1	45	49.2	44	49.2	45	46.4	44	58.2	44	74.5	45	81.8	45	85.3	45	83.3
		47	-					46	-			47	-				

Depth (ft) and water temperature (°F), Range 8

Oct. 20, 1959 Air temp. 74°		Dec. 2, 1959 Air temp. 51°		Jan. 14, 1960 Air temp. 60°		Feb. 24, 1960 Air temp. 58°		Apr. 13, 1960 Air temp. 77°		May 25, 1960 Air temp. 85°		June 23, 1960 Air temp. 88°		July 26, 1960 Air temp. 94°		Aug. 30, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.6	Surf.	47.4	Surf.	60.3	Surf.	82.0	Surf.	86.1	Surf.	90.8	Surf.	90.7
2	69.8	2	49.4	2	50.6	2	47.1	2	59.7	2	80.8	2	85.8	2	89.0	2	88.8
4	69.4	4	49.4	4	50.5	4	46.8	4	58.8	4	80.2	4	85.7	4	88.0	4	86.8
6	69.3	6	49.2	6	50.5	6	46.7	6	58.5	6	80.1	6	85.5	6	87.8	6	86.2
8	69.3	8	49.2	8	50.4	8	46.4	8	58.4	8	79.4	8	85.4	8	87.5	8	86.0
10	69.3	10	49.2	10	50.2	10	46.4	10	58.3	10	79.0	10	85.3	10	87.4	10	85.2
12	69.3	12	49.1	12	50.2	12	46.3	12	58.3	12	78.9	12	85.0	12	87.3	12	85.0
14	69.2	14	48.9	14	50.2	14	46.3	14	58.3	14	78.8	14	83.8	14	87.2	14	84.7
16	69.2	16	48.9	16	50.2	16	46.3	16	58.3	16	78.2	16	82.9	16	87.0	16	83.8
18	69.2	18	49.0	18	50.2	18	46.3	18	58.3	18	77.0	18	82.6	18	86.4	18	83.8
20	69.2	20	49.0	20	50.1	20	46.3	20	58.2	20	76.6	20	82.3	20	86.4	20	83.3
25	69.1	25	48.9	25	50.0	25	46.3	25	58.2	25	76.2	25	82.2	25	86.2	25	83.3
30	69.1	30	49.0	30	50.0	30	46.3	30	58.2	30	75.8	30	82.1	30	85.8	30	83.3
		32	-			32	46.3	31	58.2	31	75.8	32	-	32	85.7	31	83.3
								33	-								

LAY LAKE—Continued

Depth (ft) and water temperature (° F), Range 9

Oct. 20, 1959 Air temp. 74°		Dec. 3, 1959 Air temp. 42°		Jan. 14, 1960 Air temp. 59°		Feb. 24, 1960 Air temp. 59°		Apr. 13, 1960 Air temp. 75°		May 25, 1960 Air temp. 88°		June 23, 1960 Air temp. 91°		July 26, 1960 Air temp. 90°		Aug. 31, 1960 Air temp. 93°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.3	Surf.	47.2	Surf.	60.4	Surf.	83.4	Surf.	87.0	Surf.	91.7	Surf.	86.8
2	69.8	2	47.9	2	50.3	2	47.0	2	59.2	2	80.2	2	85.9	2	89.0	2	85.2
4	69.5	4	47.9	4	50.2	4	46.9	4	59.0	4	79.6	4	85.3	4	88.7	4	85.2
6	69.5	6	48.0	6	50.1	6	46.8	6	58.9	6	79.1	6	85.1	6	88.7	6	85.0
8	69.5	8	48.0	8	50.1	8	46.8	8	58.8	8	77.8	8	84.9	8	88.2	8	84.3
10	69.5	10	48.0	10	50.1	10	46.8	10	58.7	10	77.3	10	84.3	10	88.1	10	83.7
12	69.4	12	48.0	12	50.1	12	46.8	12	58.7	12	77.0	12	82.8	12	87.2	12	83.3
14	69.4	14	48.0	14	50.1	14	46.8	14	58.6	14	76.8	14	82.7	14	86.7	14	83.1
16	69.4	16	48.0	16	50.1	16	46.8	16	58.5	16	76.7	16	82.5	16	86.4	16	83.1
18	69.3	18	48.0	18	50.1	18	46.8	18	58.5	18	76.5	18	82.3	18	86.2	18	83.1
20	69.2	20	48.0	20	50.1	20	46.8	20	58.5	20	76.4	20	82.2	20	86.1	20	83.1
25	69.1	25	48.0	25	50.0	25	46.8	25	58.5	25	76.3	25	82.2	25	85.8	25	82.9
30	69.1	30	48.0	30	50.0	30	46.8	30	58.5	30	76.2	30	82.1	30	85.5	30	82.8
35	69.0	35	48.0	35	50.0	35	46.7	35	58.5	35	76.2	35	81.9	35	85.5	35	82.8
40	69.0	40	48.0	40	50.0	40	46.7	40	58.5	40	75.9	40	81.9	40	85.4	40	82.8
45	69.0	42	48.0	45	50.0	45	46.7	45	58.5	45	75.8	45	81.8	42	85.4	42	82.7
		44	-	47	50.0	50	46.7	47	58.5	48	75.7	46	81.8				
								49	-			48	-				

Depth (ft) and water temperature (° F), Range 10

Oct. 20, 1959 Air temp. 74°		Dec. 3, 1959 Air temp. 44°		Jan. 14, 1960 Air temp. 62°		Feb. 24, 1960 Air temp. 64°		Apr. 13, 1960 Air temp. 80°		May 25, 1960 Air temp. 88°		June 23, 1960 Air temp. 91°		July 26, 1960 Air temp. 88°		Aug. 31, 1960 Air temp. 93°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.7	Surf.	47.3	Surf.	60.8	Surf.	82.6	Surf.	86.6	Surf.	93.7	Surf.	86.8
2	71.2	2	47.9	2	50.7	2	47.2	2	60.5	2	81.3	2	86.3	2	91.0	2	85.7
4	71.1	4	47.9	4	50.7	4	47.2	4	59.8	4	80.3	4	86.2	4	89.2	4	85.3
6	70.8	6	47.9	6	50.7	6	47.2	6	59.5	6	80.1	6	85.8	6	88.3	6	84.8
8	70.4	8	47.9	8	50.6	8	47.2	8	59.3	8	79.5	8	85.6	8	88.2	8	85.0
10	70.4	10	47.9	10	50.6	10	47.2	10	59.3	10	79.4	10	85.5	10	87.8	10	84.9
12	70.3	12	47.8	12	50.6	12	47.2	12	59.2	12	78.8	12	85.4	12	87.7	12	84.8
14	70.3	14	47.8	14	50.6	14	47.2	14	59.1	14	78.8	14	85.2	14	87.5	14	84.1
16	70.3	16	47.8	16	50.6	16	47.2	16	59.0	16	78.2	16	85.1	16	86.7	16	83.8
18	70.4	18	47.8	18	50.6	18	47.2	18	59.0	18	77.1	18	84.5	18	86.3	18	83.4
20	70.4	20	47.8	20	50.6	20	47.1	20	58.9	20	76.8	20	83.7	20	86.3	20	83.3
25	70.4	25	47.8	25	50.6	25	47.1	25	58.9	25	76.7	25	82.3	25	86.2	25	83.2
30	70.3	30	47.8	30	50.6	30	47.0	30	58.9	30	76.7	30	82.1	30	85.8	30	83.0
35	70.3	35	47.8	35	50.5	35	46.9	35	58.9	35	76.7	35	82.0	35	85.3	35	82.8
		38	47.8			37	46.9	37	58.9	36	76.4	36	81.8	36	85.2	36	82.8
								39	-			38	-				

LAY LAKE—Continued

Depth (ft) and water temperature (° F), Range 11

Oct. 20, 1959 Air temp. 72°		Dec. 3, 1959 Air temp. 44°		Jan. 14, 1960 Air temp. 60°		Feb. 24, 1960 Air temp. 62°		Apr. 13, 1960 Air temp. 83°		May 25, 1960 Air temp. 89°		June 23, 1960 Air temp. 92°		July 26, 1960 Air temp. 88°		Aug. 31, 1960 Air temp. 95°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.8	Surf.	47.8	Surf.	61.2	Surf.	80.4	Surf.	86.3	Surf.	88.2	Surf.	88.3
2	70.0	2	47.8	2	50.7	2	47.7	2	60.7	2	80.0	2	86.2	2	88.8	2	85.7
4	69.9	4	47.8	4	50.6	4	47.7	4	60.5	4	79.3	4	86.1	4	88.4	4	85.0
6	69.6	6	47.8	6	50.6	6	47.7	6	60.3	6	79.0	6	85.9	6	88.4	6	84.6
8	69.6	8	47.8	8	50.5	8	47.7	8	60.2	8	77.8	8	85.9	8	87.7	8	84.6
10	69.5	10	47.8	10	50.5	10	47.6	10	59.8	10	77.2	10	85.9	10	87.6	10	84.2
12	69.5	12	47.8	12	50.5	12	47.5	12	59.7	12	77.2	12	85.8	12	87.3	12	84.7
14	69.4	14	47.8	14	50.5	14	47.5	14	59.6	14	77.2	14	85.8	14	86.9	14	84.5
16	69.3	16	47.8	16	50.5	16	47.5	16	59.5	16	77.2	16	85.5	16	86.7	16	84.4
18	69.1	18	47.7	18	50.5	18	47.5	18	59.4	18	77.2	18	83.0	18	86.7	18	84.4
20	69.0	20	47.7	20	50.5	20	47.5	20	59.3	20	77.2	20	83.0	20	86.6	20	84.2
25	69.0	25	47.7	25	50.4	25	47.5	25	58.6	25	77.2	25	83.0	25	86.5	25	83.2
30	69.0	30	47.7	30	50.4	30	47.5	30	58.5	30	77.2	30	83.0	30	86.5	30	83.2
32	69.0	32	47.7			33	47.5	32	58.4	31	77.2	31	82.9	31	86.4	31	83.2
		34	-					34	-			33	-				

Depth (ft) and water temperature (° F), Range 12

Oct. 21, 1959 Air temp. 66°		Dec. 3, 1959 Air temp. 49°		Jan. 14, 1960 Air temp. 66°		Feb. 24, 1960 Air temp. 60°		Apr. 13, 1960 Air temp. 80°		May 25, 1960 Air temp. 89°		June 23, 1960 Air temp. 93°		July 27, 1960 Air temp. 91°		Aug. 31, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.8	Surf.	47.9	Surf.	61.4	Surf.	82.2	Surf.	86.7	Surf.	88.7	Surf.	87.8
2	68.6	2	47.8	2	50.7	2	47.8	2	60.7	2	81.2	2	86.6	2	88.7	2	86.3
4	68.7	4	47.7	4	50.6	4	47.8	4	59.0	4	78.3	4	86.2	4	88.3	4	84.8
6	68.8	6	47.6	6	50.6	6	47.8	6	58.7	6	77.8	6	85.6	6	87.2	6	84.3
8	69.0	8	47.6	8	50.5	8	47.8	8	58.7	8	77.5	8	85.3	8	86.8	8	84.2
10	69.3	10	47.6	10	50.5	10	47.8	10	58.6	10	77.3	10	84.8	10	86.7	10	83.2
12	69.3	12	47.6	12	50.5	12	47.8	12	58.6	12	77.3	12	84.2	12	86.7	12	83.9
14	69.3	14	47.7	14	50.4	14	47.8	14	58.6	14	77.3	14	83.8	14	86.7	14	83.6
15	69.1	16	47.7	16	50.5	16	47.8	16	58.6	16	77.3	16	83.4	16	86.7	16	83.2
		18	47.7	18	50.5	18	47.8	18	58.6	18	77.2	18	83.1	18	86.3	18	83.2
		20	47.7	20	50.5	20	47.8	20	58.5	20	77.1	20	82.7	20	86.2	20	83.1
		22	-	21	50.5	22	47.8	21	58.5			22	-	21	86.2	21	83.0
								23	-								

LAY LAKE—Continued

Depth (ft) and water temperature (°F), Range 13

Oct. 21, 1959 Air temp. 67°		Dec. 3, 1959 Air temp. 49°		Jan. 14, 1960 Air temp. 67°		Feb. 25, 1960 Air temp. 41°		Apr. 13, 1960 Air temp. 80°		May 25, 1960 Air temp. 90°		June 23, 1960 Air temp. 95°		July 27, 1960 Air temp. 93°		Aug. 31, 1960 Air temp. 96°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	51.3	Surf.	48.2	Surf.	60.3	Surf.	82.0	Surf.	87.3	Surf.	89.3	Surf.	88.2
2	68.5	2	47.5	2	51.0	2	48.2	2	59.8	2	80.8	2	86.9	2	88.8	2	85.7
4	68.6	4	47.5	4	50.9	4	48.1	4	59.3	4	80.4	4	86.7	4	88.3	4	85.2
6	68.6	6	47.5	6	50.9	6	48.1	6	59.3	6	80.1	6	85.2	6	87.7	6	84.7
8	68.5	8	47.5	8	50.9	8	48.1	8	59.2	8	78.9	8	84.4	8	86.4	8	84.3
10	68.5	10	47.5	10	50.9	10	48.1	10	59.2	10	78.7	10	83.8	10	86.2	10	84.2
12	68.6	12	47.5	12	50.9	12	48.1	12	59.2	12	78.6	12	83.8	12	86.1	12	84.2
14	68.5	14	47.5	14	50.9	14	48.1	14	59.2	14	78.3	14	83.8	14	85.7	14	84.2
16	68.6	16	47.5	15	50.9	16	48.1	16	59.2	17	78.0	16	83.8	15	85.7	16	84.2
		17	47.5			17	48.1	18	-			18	-				
		19	-														

Depth (ft) and water temperature (° F), Range 14

Oct. 21, 1959 Air temp. 67°		Dec. 3, 1959 Air temp. 51°		Jan. 14, 1960 Air temp. 68°		Feb. 25, 1960 Air temp. 41°		Apr. 13, 1960 Air temp. 78°		May 25, 1960 Air temp. 89°		June 23, 1960 Air temp. 97°		July 27, 1960 Air temp. 94°		Aug. 31, 1960 Air temp. 81°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	51.4	Surf.	47.9	Surf.	59.7	Surf.	80.3	Surf.	88.5	Surf.	89.5	Surf.	85.9
2	69.7	2	47.6	2	51.3	2	47.9	2	59.5	2	80.2	2	88.3	2	89.0	2	85.9
4	70.5	4	47.6	4	51.3	4	47.9	4	59.3	4	80.0	4	87.7	4	89.0	4	86.0
6	70.4	6	47.6	6	51.2	6	47.9	6	59.3	6	79.9	6	87.6	5	87.5	6	85.9
		8	47.6	8	51.2	8	47.9	8	59.3	8	79.9	7	87.9			8	85.9
		10	47.6			10	47.9	9	59.3			9	-			9	85.9
								11	-								

LAY LAKE—Continued

Depth (ft) and water temperature (° F), Range 15

Oct. 21, 1959 Air temp. 67°		Dec. 3, 1959 Air temp. 51°		Jan. 14, 1960 Air temp. 68°		Feb. 25, 1960 Air temp. 41°		Apr. 13, 1960 Air temp. 75°		May 25, 1960 Air temp. 89°		June 23, 1960 Air temp. 97°		July 27, 1960 Air temp. 94°		Aug. 31, 1960 Air temp. 81°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	51.5	Surf.	47.9	Surf.	59.3	Surf.	80.7	Surf.	88.7	Surf.	88.7	Surf.	87.2
2	69.9	2	47.5	2	51.3	2	47.9	2	59.3	2	80.0	2	88.0	2	89.3	2	87.2
4	69.8	4	47.5	4	51.2	4	47.9	4	59.2	4	79.0	4	87.5	4	89.0	4	86.8
6	69.8	6	47.5	6	51.2	6	47.9	6	59.2	6	78.3	6	86.8	6	88.2	6	86.2
8	69.9	8	47.5	8	51.2	8	47.9	8	59.2	8	78.2	8	86.3	8	88.0	8	86.1
10	69.8	10	47.5	10	51.2	10	47.9	10	59.2	10	78.0	10	86.2	10	87.7	10	86.1
12	69.7	12	47.5	12	51.2	12	47.8	12	59.2	12	78.0	12	85.9	12	87.7	12	86.1
14	69.5	14	47.5	14	51.2	14	47.8	14	59.2	14	77.9	14	85.8	14	87.7	14	85.9
16	69.5	16	47.5	16	51.2	16	47.8	16	59.2	16	77.9	16	85.5	16	87.7	16	85.9
18	69.4	18	47.5	18	51.2	18	47.8	18	59.2	18	77.9	18	85.0	18	87.0	18	85.8
		20	47.5	19	51.2	20	47.8	20	59.2	19	77.7	19	84.8	19	87.0	20	85.6
		22	-					21	59.2			21	-				-
								23	-								

SYLACAUGA RESERVOIR

Depth (ft) and water temperature (° F), Range 1

Oct. 26, 1959 Air temp. 74°		Dec. 4, 1959 Air temp. 40°		Jan. 15, 1960 Air temp. 60°		Feb. 26, 1960 Air temp. 38°		Apr. 14, 1960 Air temp. 73°		May 26, 1960 Air temp. 85°		June 24, 1960 Air temp. 83°		July 28, 1960 Air temp. 93°		Sept. 1, 1960 Air temp. 87°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.6	Surf.	54.9	Surf.	46.8	Surf.	64.3	Surf.	79.2	Surf.	84.2	Surf.	86.5	Surf.	83.6
2	72.3	2	51.5	2	54.3	2	46.8	2	63.7	2	79.2	2	84.1	2	84.7	2	83.0
4	71.8	4	51.5	4	52.8	4	46.8	4	63.5	4	79.2	4	84.1	4	85.8	4	82.8
6	71.8	6	51.5	6	51.7	6	46.8	6	60.8	6	79.0	6	84.1	6	86.0	6	82.8
8	71.8	8	51.5	8	49.4	8	46.8	8	59.0	8	74.7	8	82.7	8	85.8	8	82.7
10	71.5	10	51.4	10	48.7	10	46.8	10	58.6	10	70.0	10	79.5	10	85.7	10	82.6
12	71.5	12	51.4	12	48.4	12	46.7	12	57.7	12	67.9	12	74.3	12	83.3	12	82.5
14	71.5	14	51.4	14	48.0	14	46.7	14	57.2	14	66.0	14	70.2	14	77.8	14	80.8
16	71.5	16	51.4	16	47.9	16	46.7	16	56.5	16	64.4	16	66.3	16	72.5	16	76.2
18	71.5	18	51.4	18	47.9	18	46.6	18	55.9	18	63.2	18	64.0	18	68.0	18	71.0
20	71.5	20	51.4	20	47.8	20	46.6	20	55.4	20	61.4	20	61.8	20	64.0	20	66.3
25	71.5	25	51.4	25	47.7	25	46.5	25	54.2	25	57.7	25	57.8	25	58.3	25	59.1
30	67.6	30	51.4	30	47.7	30	46.4	30	52.2	30	55.8	30	55.7	30	55.8	30	56.2
35	65.8	35	51.4	35	47.7	35	46.3	35	50.2	35	55.0	35	54.6	35	54.7	35	54.9
40	64.7	40	51.4	40	47.7	40	45.9	40	49.2	40	54.3	40	53.8	40	53.7	40	54.2
45	63.9	45	51.4	45	47.5	45	45.7	45	48.7	45	53.8	45	53.4	45	53.2	45	53.7
50	63.8	50	51.3	50	47.5	50	45.5	50	48.4	50	53.3	50	52.9	50	53.1	50	53.5
55	63.6	51	51.3	51	47.5	52	45.5	52	48.3	53	53.1	52	52.8	53	52.9	52	53.4
57	-	53	-	53	-	54	-	54	-	55	-	54	-	55	-	54	-

SYLACAUGA RESERVOIR—Continued

Depth (ft) and water temperature (° F), Range 2

Oct. 26, 1959 Air temp. 75°		Dec. 4, 1959 Air temp. 45°		Jan. 15, 1960 Air temp. 60°		Feb. 26, 1960 Air temp. 38°		Apr. 14, 1960 Air temp. 74°		May 26, 1960 Air temp. 86°		June 24, 1960 Air temp. 84°		July 28, 1960 Air temp. 90°		Sept. 1, 1960 Air temp. 88°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.8	Surf.	54.3	Surf.	47.1	Surf.	64.3	Surf.	79.3	Surf.	84.3	Surf.	86.8	Surf.	84.0
2	72.5	2	51.7	2	54.3	2	47.1	2	64.1	2	79.3	2	84.2	2	86.4	2	83.3
4	71.9	4	51.7	4	53.8	4	47.0	4	62.8	4	79.1	4	84.2	4	86.2	4	83.2
6	71.5	6	51.7	6	50.8	6	47.0	6	62.2	6	79.0	6	83.9	6	85.8	6	82.9
8	71.5	8	51.7	8	49.9	8	47.0	8	59.0	8	74.9	8	82.3	8	85.8	8	82.8
10	71.4	10	51.6	10	49.0	10	46.9	10	58.3	10	70.2	10	79.7	10	85.7	10	82.8
12	71.3	12	51.6	12	48.5	12	46.8	12	57.7	12	67.8	12	74.5	12	83.5	12	82.5
14	71.3	14	51.6	14	48.2	14	46.8	14	57.2	14	66.7	14	69.5	14	78.4	14	80.3
16	71.3	16	51.6	16	48.0	16	46.8	16	56.7	16	64.5	16	66.3	16	72.8	16	75.7
18	71.3	18	51.6	18	47.9	18	46.8	18	56.1	18	62.8	18	63.8	18	68.1	18	71.2
20	71.3	20	51.6	20	47.9	20	46.8	20	55.5	20	61.1	20	61.7	20	59.2	20	66.7
25	71.2	25	51.6	25	47.8	25	46.7	25	54.2	25	57.7	25	57.5	25	58.2	25	59.1
30	67.1	30	51.6	30	47.7	30	46.6	30	52.3	30	56.0	30	55.6	30	55.7	30	56.3
35	65.4	35	51.5	35	47.6	35	46.6	35	50.0	35	54.9	35	54.5	35	54.7	35	54.8
40	64.6	40	51.5	40	47.5	40	46.1	40	49.2	40	54.3	40	53.7	40	53.8	40	54.2
45	63.9	45	51.3	45	47.4	45	45.7	45	48.7	45	53.8	45	53.2	45	53.4	45	53.8
50	63.5	47	51.1	50	47.0	48	45.5	49	48.5	50	53.5	50	52.9	50	53.2	50	53.6
52	63.3	49	-	51	47.0	50	-	51	-	52	53.2	51	52.8	52	-	52	53.4
54	-			53	-					54	-	53	-			54	-

Depth (ft) and water temperature (° F), Range 3

Oct. 26, 1959 Air temp. 76°		Dec. 4, 1959 Air temp. 46°		Jan. 15, 1960 Air temp. 60°		Feb. 26, 1960 Air temp. 39°		Apr. 14, 1960 Air temp. 75°		May 26, 1960 Air temp. 86°		June 24, 1960 Air temp. 85°		July 28, 1960 Air temp. 88°		Sept. 1, 1960 Air temp. 88°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.8	Surf.	54.8	Surf.	47.6	Surf.	64.5	Surf.	80.3	Surf.	84.3	Surf.	86.8	Surf.	83.8
2	72.6	2	51.8	2	54.8	2	47.5	2	63.8	2	80.2	2	84.2	2	86.2	2	83.7
4	72.3	4	51.8	4	54.7	4	47.4	4	61.7	4	79.9	4	84.2	4	86.0	4	83.2
6	72.2	6	51.8	6	54.3	6	47.4	6	60.2	6	79.7	6	84.2	6	85.8	6	82.8
8	72.2	8	51.8	8	52.8	8	47.3	8	59.0	8	74.3	8	83.5	8	85.8	8	82.7
10	71.7	10	51.8	10	50.1	10	47.3	10	58.5	10	70.5	10	81.2	10	85.2	10	82.7
12	71.6	12	51.8	12	48.8	12	47.3	12	58.1	12	68.2	12	77.0	12	83.3	12	82.2
14	71.5	14	51.7	14	48.2	14	47.3	14	57.4	14	66.3	14	70.8	14	78.5	14	80.6
16	71.5	16	51.7	16	48.2	16	47.3	16	56.8	16	65.0	16	67.3	16	72.7	16	76.7
18	71.4	18	51.7	18	48.1	18	47.3	18	56.6	18	63.2	18	63.7	18	67.2	18	70.7
20	71.3	20	51.7	20	47.9	20	47.3	20	56.2	20	61.7	20	61.2	20	63.5	20	66.7
25	71.3	25	51.7	25	47.8	25	47.3	25	54.7	25	57.7	25	57.4	25	58.3	25	59.1
30	67.5	30	51.7	30	47.7	30	47.2	30	51.8	30	56.1	30	55.5	30	56.2	30	56.4
35	65.7	35	51.7	35	47.7	35	47.2	35	50.8	35	55.0	35	54.2	35	54.8	35	55.2
40	64.5	40	51.5	40	47.6	40	46.1	40	49.5	40	54.2	40	53.7	40	54.2	40	54.2
41	64.2	41	51.5	41	47.2	45	45.6	45	48.8	45	53.8	45	53.3	45	53.7	45	53.9
43	-	43	-	43	-	46	45.5	47	-	47	53.7	46	53.3	47	53.6	48	53.8
						48	-			49	-	48	-	49	-	50	-

SYLACAUGA RESERVOIR—Continued

Depth (ft) and water temperature (° F), Range 4

Oct. 26, 1959 Air temp. 80°		Dec. 4, 1959 Air temp. 52°		Jan. 15, 1960 Air temp. 61°		Feb. 26, 1960 Air temp. 42°		Apr. 14, 1960 Air temp. 74°		May 26, 1960 Air temp. 89°		June 24, 1960 Air temp. 87°		July 28, 1960 Air temp. 86°		Sept. 1, 1960 Air temp. 90°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.2	Surf.	55.3	Surf.	47.8	Surf.	64.0	Surf.	81.2	Surf.	84.9	Surf.	86.7	Surf.	85.3
2	72.8	2	51.8	2	55.0	2	47.8	2	62.4	2	80.8	2	84.8	2	86.2	2	83.7
4	71.9	4	51.7	4	53.7	4	47.2	4	61.8	4	80.5	4	84.7	4	85.8	4	83.0
6	71.8	6	51.7	6	51.7	6	47.2	6	60.2	6	77.2	6	83.9	6	85.7	6	82.7
8	71.7	8	51.7	8	50.8	8	47.2	8	58.8	8	73.4	8	82.4	8	85.7	8	82.6
10	71.6	10	51.6	10	49.3	10	47.2	10	58.0	10	69.8	10	80.4	10	85.3	10	82.5
12	71.6	12	51.6	12	49.2	12	47.2	12	57.5	12	68.4	12	76.7	12	82.7	12	82.5
14	71.6	14	51.6	14	48.8	14	47.2	14	56.8	14	66.7	14	73.3	14	77.6	14	80.2
16	71.6	16	51.6	16	48.5	16	47.2	16	56.2	16	65.7	16	69.3	16	72.8	16	75.8
18	71.6	18	51.6	18	48.1	18	47.2	18	55.8	18	63.5	18	65.3	18	68.0	18	71.2
20	71.5	20	51.6	20	47.9	20	47.2	20	55.4	20	61.7	20	62.5	20	62.8	20	66.3
25	70.8	25	51.6	25	47.7	25	47.1	25	54.6	25	57.7	25	61.6	25	58.3	25	59.2
30	67.9	30	51.6	30	47.7	30	46.9	30	52.6	30	55.9	30	55.5	30	56.2	30	56.7
35	66.0	35	50.3	35	47.6	35	45.7	35	50.3	35	55.2	35	54.7	35	55.0	35	55.3
38	65.2	37	50.3	39	47.3	38	45.7	38	50.0	36	55.0	37	-	37	-	38	55.0
40	-	39	-	41	-	40	-	40	-	38	-					40	-

Depth (ft) and water temperature (° F), Range 5

Oct. 26, 1959 Air temp. 74°		Dec. 4, 1959 Air temp. 53°		Jan. 15, 1960 Air temp. 61°		Feb. 26, 1960 Air temp. 40°		Apr. 14, 1960 Air temp. 74°		May 26, 1960 Air temp. 86°		June 24, 1960 Air temp. 88°		July 28, 1960 Air temp. 85°		Sept. 1, 1960 Air temp. 89°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	52.2	Surf.	55.3	Surf.	47.3	Surf.	63.6	Surf.	81.3	Surf.	84.9	Surf.	86.0	Surf.	84.6
2	73.7	2	51.8	2	55.2	2	47.3	2	63.2	2	81.2	2	84.8	2	85.8	2	84.1
4	72.2	4	51.7	4	54.9	4	47.2	4	61.0	4	80.6	4	84.7	4	85.6	4	82.8
6	72.2	6	51.6	6	54.9	6	47.2	6	60.3	6	76.3	6	84.6	6	85.5	6	82.7
8	71.8	8	51.5	8	54.2	8	47.2	8	59.4	8	73.4	8	83.0	8	85.4	8	82.7
10	71.6	10	51.5	10	53.1	10	47.2	10	58.6	10	70.2	10	80.7	10	85.3	10	82.3
12	71.5	12	51.5	12	50.8	12	47.2	12	58.2	12	68.2	12	77.8	12	83.0	12	82.2
14	71.4	14	51.5	14	50.2	14	47.2	14	57.3	14	66.3	14	74.4	14	76.9	14	79.4
16	71.1	16	51.5	16	49.3	16	47.2	16	56.4	16	64.5	16	70.2	16	71.3	16	75.8
18	71.0	18	51.4	18	48.4	18	47.1	18	56.2	18	63.0	18	66.2	18	67.2	18	70.7
20	70.7	20	51.4	20	48.1	20	46.9	20	55.7	20	61.4	20	62.7	20	63.5	20	66.7
25	69.8	25	51.0	25	47.8	23	46.8	25	54.5	25	58.2	25	57.9	25	58.5	25	59.4
29	67.6	27	50.0	27	47.8	25	-	28	53.0	29	56.6	27	56.7	29	56.3	29	57.2
31	-	29	-	29	-			30	-	31	-	29	-	31	-	31	-

Depth (ft) and water temperature (° F), Range 6

Oct. 26, 1959 Air temp. 84°		Dec. 4, 1959 Air temp. 55°		Jan. 15, 1960 Air temp. 66°		Feb. 26, 1960 Air temp. 43°		Apr. 14, 1960 Air temp. 75°		May 26, 1960 Air temp. 86°		June 24, 1960 Air temp. 89°		July 28, 1960 Air temp. 88°		Sept. 1, 1960 Air temp. 90°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.8	Surf.	55.8	Surf.	48.3	Surf.	63.9	Surf.	81.5	Surf.	85.7	Surf.	86.3	Surf.	85.2
2	73.8	2	51.7	2	55.7	2	48.2	2	63.2	2	81.2	2	85.6	2	86.2	2	83.8
4	72.5	4	51.3	4	55.5	4	47.8	4	60.2	4	79.4	4	85.0	4	85.8	4	83.1
6	71.8	6	51.2	6	55.5	6	47.5	6	59.4	6	77.2	6	84.7	6	85.7	6	82.6
8	71.3	8	50.8	8	54.4	8	47.3	8	58.8	8	74.0	8	82.6	8	85.4	8	82.6
10	70.6	10	50.3	10	52.1	10	47.0	10	58.2	10	70.0	10	80.2	10	85.0	10	82.4
12	69.2	12	47.3	12	51.5	12	46.8	12	57.8	12	68.2	12	79.1	12	83.2	12	81.6
14	68.6	14	47.0	14	49.3	14	46.7	14	56.8	14	66.4	14	75.7	14	78.5	14	79.4
15	68.6	16	-	16	-	16	-	16	-	16	-	16	-	16	-	15	78.8
17	-															17	-

SYLACAUGA RESERVOIR—Continued

Depth (ft) and water temperature (°F), Range 7

Oct. 26, 1959 Air temp. 77°		Dec. 4, 1959 Air temp. 56°		Jan. 15, 1960 Air temp. 67°		Feb. 26, 1960 Air temp. 42°		Apr. 14, 1960 Air temp. 75°		May 26, 1960 Air temp. 86°		June 24, 1960 Air temp. 90°		July 28, 1960 Air temp. 88°		Sept. 1, 1960 Air temp. 90°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.0	Surf.	56.2	Surf.	46.5	Surf.	64.3	Surf.	82.3	Surf.	85.7	Surf.	77.2	Surf.	86.0
2	73.0	2	48.4	2	55.9	2	46.2	2	61.2	2	81.0	2	85.3	2	76.7	2	84.3
4	72.4	4	47.0	4	53.8	4	46.2	3	60.5	4	79.3	4	84.7	4	75.8	4	82.2
6	70.0	6	43.2	6	52.7	6	42.2	5	-	5	77.7	6	83.8	6	-	5	82.0
8	-	8	-	8	-	8	-			7	-	8	-			7	-

Depth (ft) and water temperature (°F), Range 8

Oct. 26, 1959 Air temp. 77°		Dec. 4, 1959 Air temp. 59°		Jan. 15, 1960 Air temp. 66°		Feb. 26, 1960 Air temp. 44°		Apr. 14, 1960 Air temp. 75°		May 26, 1960 Air temp. 85°		June 24, 1960 Air temp. 91°		July 28, 1960 Air temp. 89°		Sept. 1, 1960 Air temp. 92°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	53.1	Surf.	54.1	Surf.	48.3	Surf.	65.8	Surf.	81.5	Surf.	85.7	Surf.	87.3	Surf.	86.2
2	73.8	2	52.2	2	54.0	2	48.2	2	65.6	2	81.2	2	85.3	2	86.8	2	83.7
4	73.0	4	51.7	4	53.8	4	47.4	4	65.5	4	80.8	4	84.8	4	86.4	4	83.1
6	72.8	6	51.5	6	53.2	6	47.3	6	62.0	6	79.2	6	84.5	6	86.2	6	83.0
8	72.5	8	51.4	8	50.4	8	47.2	8	58.8	8	74.3	8	82.9	8	86.0	8	82.8
10	72.4	10	51.4	10	49.7	10	47.2	10	58.3	10	70.2	10	77.7	10	85.2	10	82.7
12	71.5	12	51.4	12	48.8	12	47.2	12	57.7	12	67.7	12	73.7	12	83.2	12	82.3
14	71.3	14	51.3	14	48.2	14	47.2	14	56.9	14	66.4	14	70.1	14	78.5	14	80.7
16	71.3	16	51.3	16	48.1	16	47.2	16	56.3	16	65.2	16	66.3	16	72.7	16	76.4
18	71.2	18	51.3	18	48.0	18	47.2	18	55.7	18	62.8	18	64.2	18	68.0	18	71.3
20	71.2	20	51.3	20	48.0	20	47.2	20	55.2	20	61.2	20	61.5	20	64.2	20	66.5
25	70.6	25	51.3	25	48.0	25	46.8	25	54.0	25	58.2	25	57.7	25	58.5	25	58.7
30	66.5	30	51.3	30	47.8	30	46.4	30	52.0	30	56.4	30	55.7	30	55.8	30	56.2
35	64.8	35	51.3	35	47.8	35	46.2	35	50.2	35	55.2	35	54.5	35	54.8	35	55.2
40	63.9	40	51.2	40	47.7	40	45.7	40	49.2	40	54.7	40	53.7	40	53.8	40	54.2
43	63.5	41	51.2	45	47.7	44	45.5	44	49.0	45	53.8	43	53.4	42	53.7	44	53.8
45	-	43	-	47	-	46	-	46	-	47	-	45	-	44	-	46	-

Depth (ft) and water temperature (° F), Range 9

Oct. 26, 1959 Air temp. 71°		Dec. 4, 1959 Air temp. 63°		Jan. 15, 1960 Air temp. 66°		Feb. 26, 1960 Air temp. 44°		Apr. 14, 1960 Air temp. 76°		May 26, 1960 Air temp. 85°		June 24, 1960 Air temp. 92°		July 28, 1960 Air temp. 90°		Sept. 1, 1960 Air temp. 94°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	52.5	Surf.	52.8	Surf.	48.7	Surf.	65.8	Surf.	80.5	Surf.	85.4	Surf.	87.7	Surf.	86.5
2	71.6	2	52.5	2	52.8	2	48.5	2	63.2	2	79.5	2	85.1	2	86.8	2	84.8
4	71.2	4	52.3	4	52.2	4	48.4	4	62.4	4	79.0	4	84.7	4	86.3	4	83.5
6	71.1	6	52.1	6	51.7	6	48.4	6	59.7	6	78.3	6	83.9	6	86.2	6	83.0
8	70.9	8	51.5	8	49.4	8	48.3	8	58.7	8	73.3	8	82.2	8	86.2	8	83.0
10	70.8	10	51.5	10	48.7	10	48.3	10	58.2	10	69.7	10	78.7	10	85.8	10	82.8
12	70.8	12	51.4	12	48.3	12	47.8	12	57.6	12	67.2	12	72.7	12	83.0	12	82.7
14	70.7	14	51.3	14	48.0	14	47.5	14	57.0	14	65.7	14	68.8	14	77.8	14	80.5
16	70.7	16	51.3	16	48.0	16	47.5	16	56.5	16	64.5	16	65.9	16	73.0	16	77.2
18	70.5	18	51.3	18	48.0	18	47.5	18	56.0	18	62.7	18	63.3	18	68.2	18	70.9
20	70.5	20	51.3	20	48.0	20	47.4	20	55.3	20	61.6	20	61.3	20	64.3	20	66.4
25	69.6	25	51.2	25	47.8	25	46.9	25	54.2	25	58.3	25	58.2	25	58.7	25	59.7
30	66.4	30	50.7	30	47.8	30	46.5	30	52.5	30	56.2	30	56.8	30	56.3	30	56.7
35	64.8	31	50.7	34	47.8	32	-	32	-	35	55.0	32	-	35	55.2	35	55.4
36	64.6	33	-	36	-					36	54.7			37	-	37	-
38	-									38	-						

SYLACAUGA RESERVOIR—Continued

Depth (ft) and water temperature (°F), Range 10

Oct. 26, 1959 Air temp. 76°		Dec. 4, 1959 Air temp. 61°		Jan. 15, 1960 Air temp. 65°		Feb. 26, 1960 Air temp. 48°		Apr. 14, 1960 Air temp. 76°		May 26, 1960 Air temp. 84°		June 24, 1960 Air temp. 93°		July 28, 1960 Air temp. 79°		Sept. 1, 1960 Air temp. 91°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	52.5	Surf.	53.2	Surf.	48.6	Surf.	66.0	Surf.	80.4	Surf.	86.3	Surf.	87.0	Surf.	86.0
2	72.4	2	51.3	2	52.8	2	48.3	2	64.8	2	79.8	2	85.7	2	86.8	2	84.8
4	71.3	4	51.2	4	52.5	4	48.2	4	62.5	4	79.0	4	85.0	4	86.4	4	83.7
6	71.0	6	51.2	6	52.2	6	48.2	6	60.5	6	77.8	6	84.3	6	86.2	6	83.0
8	70.8	8	51.2	8	50.0	8	48.0	8	58.7	8	73.8	8	82.7	8	85.8	8	82.7
10	70.6	10	51.1	10	49.2	10	48.0	10	58.1	10	69.4	10	78.7	10	85.2	10	82.5
12	70.6	12	51.1	12	48.8	12	48.0	12	57.3	12	67.5	12	73.2	12	83.8	12	82.3
14	70.6	14	50.7	14	48.4	14	47.8	14	56.8	14	66.5	14	69.7	14	79.3	14	81.2
16	70.5	16	50.5	16	48.2	16	47.6	16	56.5	16	64.6	16	66.0	16	72.5	16	78.3
18	69.7	18	50.1	18	48.2	18	47.2	18	55.9	18	63.3	18	63.5	18	68.0	18	70.2
20	68.9	20	-	20	48.0	20	47.0	20	55.7	20	61.0	20	62.2	20	66.0	20	66.4
22	68.5			22	-	22	-	22	55.0	22	60.0	22	-	22	-	22	62.5
24	-							24	-	24	-					24	-

TUSCALOOSA COUNTY LAKE

Depth (ft) and water temperature (° F), Range 1

Sept. 24, 1959 Air temp. 78°		Oct. 27, 1959 Air temp. 66°		Dec. 10, 1959 Air temp. 57°		Jan. 21, 1960 Air temp. 32°		Mar. 5, 1960 Air temp. 29°		Apr. 21, 1960 Air temp. 74°		May 19, 1960 Air temp. 84°		July 8, 1960 Air temp. 84°		Aug. 4, 1960 Air temp. 85°		Sept. 7, 1960 Air temp. 96°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.0	Surf.	48.1	Surf.	45.6	Surf.	67.4	Surf.	78.5	Surf.	85.7	Surf.	86.3	Surf.	90.2
2	78.0	2	69.2	2	49.9	2	47.8	2	45.6	2	67.3	2	77.9	2	85.4	2	86.2	2	87.5
4	76.6	4	69.1	4	49.8	4	47.7	4	45.5	4	66.9	4	74.5	4	85.3	4	86.1	4	86.7
6	73.5	6	69.0	6	49.8	6	47.7	6	45.5	6	66.0	6	70.3	6	85.3	6	86.1	6	86.1
8	71.7	8	68.9	8	49.8	8	47.7	8	45.5	8	64.8	8	66.7	8	85.2	8	86.1	8	84.7
10	71.2	10	68.8	10	49.8	10	47.7	10	45.4	10	64.0	10	64.3	10	85.2	10	84.4	10	82.4
12	70.3	12	68.8	12	49.8	12	47.7	12	45.4	12	62.3	12	62.9	12	72.0	12	78.7	12	79.2
14	69.2	14	68.8	14	49.6	14	47.7	14	45.4	14	58.3	14	60.8	14	63.7	14	69.4	14	73.3
16	66.5	16	68.7	16	49.6	16	47.6	16	45.4	16	55.0	16	58.4	16	59.7	16	63.7	16	67.2
18	63.7	18	68.7	18	49.5	18	47.6	18	45.4	18	53.0	18	55.8	18	57.2	18	60.2	18	63.2
20	60.8	20	68.7	20	49.5	20	47.6	20	45.4	20	51.6	20	53.8	20	56.0	20	57.2	20	59.6
25	57.3	25	63.8	25	49.4	25	47.6	25	45.4	25	50.2	25	51.6	25	53.6	25	54.3	25	54.7
30	55.1	30	61.4	30	49.3	30	47.6	30	45.4	30	49.5	30	50.8	30	52.6	30	53.1	30	53.3
33	54.4	35	60.5	35	49.3	35	47.6	35	45.4	35	49.3	35	50.4	35	52.0	35	52.6	35	52.8
35	-	38	60.2	38	49.3	40	47.5	38	45.4	40	49.3	40	50.3	40	51.9	40	52.3	37	52.7
		40	-	40	-	42	-	40	-	42	49.3	42	-	41	51.8	42	52.1	39	-
										44	-			43	-	44	-		

TUSCALOOSA COUNTY LAKE—Continued

Depth (ft) and water temperature (° F), Range 2

Sept. 24, 1959 Air temp. 78°		Oct. 27, 1959 Air temp. 66°		Dec. 10, 1959 Air temp. 56°		Jan. 21, 1960 Air temp. 33°		Mar. 5, 1960 Air temp. 28°		Apr. 21, 1960 Air temp. 78°		May 19, 1960 Air temp. 87°		July 8, 1960 Air temp. 85°		Aug. 4, 1960 Air temp. 89°		Sept. 7, 1960 Air temp. 97°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.6	Surf.	48.1	Surf.	45.6	Surf.	68.7	Surf.	79.6	Surf.	85.8	Surf.	86.7	Surf.	90.7
2	77.7	2	69.0	2	50.2	2	48.0	2	45.5	2	68.2	2	77.8	2	85.7	2	86.5	2	87.6
4	75.3	4	69.0	4	50.0	4	48.0	4	45.5	4	67.7	4	73.8	4	85.5	4	86.3	4	87.2
6	73.0	6	68.9	6	49.9	6	47.9	6	45.4	6	65.5	6	69.8	6	85.4	6	86.3	6	85.7
8	71.9	8	68.8	8	49.9	8	47.9	8	45.4	8	65.2	8	66.3	8	85.3	8	86.2	8	84.3
10	70.9	10	68.7	10	49.8	10	47.8	10	45.4	10	64.0	10	64.8	10	84.3	10	84.8	10	82.7
12	70.5	12	68.7	12	49.8	12	47.8	12	45.4	12	62.0	12	63.2	12	72.0	12	77.5	12	79.2
14	69.2	14	68.7	14	49.7	14	47.8	14	45.4	14	58.0	14	60.5	14	64.5	14	70.0	14	72.7
16	66.5	16	68.7	16	49.6	16	47.8	16	45.3	16	55.4	16	58.8	16	59.7	16	63.6	16	67.8
18	63.6	18	68.6	18	49.5	18	47.8	18	45.3	18	53.8	18	56.2	18	57.1	18	60.0	18	62.6
20	61.0	20	68.5	20	49.5	20	47.8	20	45.3	20	51.1	20	53.5	20	55.7	20	57.4	20	59.2
25	57.5	25	64.6	25	49.4	25	47.8	25	45.2	25	49.8	25	51.5	25	53.7	25	54.2	25	55.2
30	55.1	30	62.0	30	49.4	30	47.7	30	45.2	30	49.5	30	50.8	30	52.3	30	53.2	30	53.8
35	54.4	35	61.0	35	49.3	35	47.7	35	45.2	35	49.3	35	50.6	35	52.0	35	52.7	35	53.2
40	54.2	36	60.8	37	49.3	38	47.7	40	45.2	37	-	40	50.3	40	51.9	40	52.4	40	52.8
42	-	38	-	39	-	40	-	42	-			42	-	41	51.8	42	-	42	-
														43	-				

Depth (ft) and water temperature (° F), Range 3

Sept. 24, 1959 Air temp. 78°		Oct. 27, 1959 Air temp. 66°		Dec. 10, 1959 Air temp. 55°		Jan. 21, 1960 Air temp. 33°		Mar. 5, 1960 Air temp. 30°		Apr. 21, 1960 Air temp. 78°		May 19, 1960 Air temp. 87°		July 8, 1960 Air temp. 85°		Aug. 4, 1960 Air temp. 95°		Sept. 7, 1960 Air temp. 98°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.6	Surf.	47.9	Surf.	45.5	Surf.	68.3	Surf.	81.6	Surf.	86.2	Surf.	87.2	Surf.	91.7
2	77.2	2	69.2	2	50.2	2	47.9	2	45.3	2	68.2	2	77.8	2	86.0	2	86.7	2	89.2
4	74.6	4	69.2	4	50.0	4	47.8	4	45.3	4	67.6	4	75.7	4	85.5	4	86.3	4	86.8
6	72.8	6	69.2	6	49.9	6	47.8	6	45.2	6	67.3	6	69.0	6	85.2	6	86.2	6	85.8
8	71.4	8	69.1	8	49.8	8	47.8	8	45.2	8	65.8	8	66.1	8	84.9	8	86.2	8	83.7
10	70.8	10	69.0	10	49.7	10	47.8	10	45.2	10	63.6	10	64.3	10	83.2	10	84.0	10	82.7
12	70.3	12	68.7	12	49.7	12	47.8	12	45.1	12	62.2	12	63.0	12	73.8	12	78.7	12	80.0
14	69.6	14	68.6	14	49.7	14	47.8	14	45.1	14	58.6	14	61.3	14	65.3	14	70.3	14	72.2
16	67.4	16	68.5	16	49.6	16	47.8	16	45.0	16	54.4	16	58.4	16	59.8	16	62.8	16	67.2
18	63.0	18	68.5	18	49.6	18	47.8	18	44.9	18	52.7	18	55.8	18	57.2	18	59.3	18	62.0
20	61.4	20	68.5	20	49.5	20	47.8	20	44.9	20	51.2	20	53.4	20	56.0	20	57.2	20	58.5
25	56.4	25	63.6	25	49.4	25	47.7	25	44.9	25	49.8	25	51.5	25	53.3	25	54.3	25	55.6
29	55.2	30	61.6	30	49.3	30	47.7	30	44.9	30	49.6	30	50.8	30	52.4	30	53.8	29	53.5
31	-	32	-	33	49.3	35	47.7	32	-	35	49.5	35	50.7	35	52.3	35	57.7	31	-
				35	-	37	47.6			37	49.5	36	50.7	37	52.2	40	52.2		
						39	-			39	-	38	-	39	-	42	-		

TUSCALOOSA COUNTY LAKE—Continued

Depth (ft) and water temperature (° F), Range 4

Sept. 24, 1959 Air temp. 78°		Oct. 27, 1959 Air temp. 63°		Dec. 10, 1959 Air temp. 56°		Jan. 21, 1960 Air temp. 37°		Mar. 5, 1960 Air temp. 30°		Apr. 21, 1960 Air temp. 78°		May 19, 1960 Air temp. 88°		July 8, 1960 Air temp. 85°		Aug. 4, 1960 Air temp. 95°		Sept. 7, 1960 Air temp. 98°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	-	Surf.	50.8	Surf.	47.8	Surf.	44.8	Surf.	69.2	Surf.	82.4	Surf.	85.7	Surf.	87.7	Surf.	91.7
2	75.3	2	69.2	2	50.6	2	47.6	2	44.8	2	69.0	2	80.7	2	85.2	2	86.7	2	89.2
4	73.6	4	69.2	4	50.1	4	47.5	4	44.7	4	68.8	4	75.5	4	84.8	4	86.3	4	86.8
6	72.9	6	69.1	6	49.8	6	47.5	6	44.7	6	68.0	6	70.7	6	84.7	6	86.2	6	85.8
8	72.1	8	69.0	8	49.7	8	47.4	8	44.7	8	67.8	8	68.7	8	84.4	8	86.2	8	83.7
10	71.5	10	68.9	10	49.6	10	47.4	10	44.6	10	63.8	10	66.2	10	83.0	10	85.7	10	82.7
12	70.7	12	68.9	12	49.6	12	47.3	12	44.5	12	60.1	12	63.6	12	73.0	12	77.8	12	80.0
14	69.4	14	68.7	14	49.5	14	47.3	14	44.4	14	56.3	14	60.8	14	66.5	14	70.8	14	72.2
16	66.8	16	68.5	16	49.5	16	47.3	16	44.3	16	53.7	16	58.2	16	60.3	16	63.7	16	67.2
18	63.2	18	68.1	18	49.5	18	47.3	18	44.2	18	51.7	18	55.4	18	58.4	18	59.5	18	62.0
20	60.2	20	68.0	20	49.5	20	47.3	20	44.2	20	50.8	20	54.0	20	55.5	20	56.7	20	58.5
21	59.2	25	63.7	25	49.3	25	47.3	24	44.2	25	50.2	25	51.5	25	53.4	25	54.4	25	55.6
23	-	27	-	27	-	30	47.2	26	-	27	-	26	51.2	30	53.2	29	53.7	29	53.5
						32	-					28	-	32	-	31	-	31	-

Depth (ft) and water temperature (° F), Range 5

Oct. 27, 1959 Air temp. 61°		Dec. 10, 1959 Air temp. 58°		Jan. 21, 1960 Air temp. 37°		Mar. 5, 1960 Air temp. 31°		Apr. 21, 1960 Air temp. 77°		May 19, 1960 Air temp. 88°		July 8, 1960 Air temp. 86°		Aug. 4, 1960 Air temp. 93°		Sept. 7, 1960 Air temp. 98°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	50.7	Surf.	46.6	Surf.	44.3	Surf.	69.8	Surf.	84.3	Surf.	85.9	Surf.	88.3	Surf.	90.3
2	69.5	2	50.7	2	46.4	2	44.2	2	69.6	2	81.0	2	85.2	2	87.8	2	87.2
4	69.4	4	50.2	4	46.1	4	44.2	4	69.2	4	79.2	4	84.6	4	87.2	4	85.9
6	69.2	6	50.1	6	46.1	6	43.9	6	69.0	6	76.2	6	84.3	6	87.0	6	85.3
8	68.9	8	50.0	8	46.0	8	43.4	8	68.3	8	69.3	8	83.3	8	86.7	8	84.1
10	-	10	-	9	46.0	9	43.3	10	68.0	9	67.5	10	81.8	9	86.2	10	81.4
				11	-	11	-	11	64.7	11	-	12	-	11	-	12	-
								13	-								

Depth (ft) and water temperature (° F), Range 6

Oct. 27, 1959 Air temp. 59°		Dec. 10, 1959 Air temp. 60°		Jan. 21, 1960 Air temp. 37°		Mar. 5, 1960 Air temp. 33°		Apr. 21, 1960 Air temp. 77°		May 19, 1960 Air temp. 88°		July 8, 1960 Air temp. 87°		Aug. 4, 1960 Air temp. 92°		Sept. 7, 1960 Air temp. 98°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	51.2	Surf.	46.0	Surf.	44.2	Surf.	70.0	Surf.	82.5	Surf.	86.4	Surf.	88.2	Surf.	91.5
2	69.7	2	51.1	2	46.0	2	43.5	2	69.7	2	81.3	2	85.8	2	87.2	2	90.0
4	69.5	4	50.3	4	46.0	4	43.3	4	69.2	4	80.2	4	85.2	4	86.9	4	87.2
6	69.3	6	49.9	6	45.7	6	43.1	6	69.0	6	73.2	6	84.7	6	86.7	6	86.2
7	69.1	8	49.8	8	45.6	8	43.0	8	68.6	8	68.8	8	84.2	8	86.3	8	82.8
9	-	10	-	10	45.5	10	42.7	10	67.5	10	65.3	10	80.8	10	84.3	10	-
				12	45.5	11	42.7	12	-	12	64.3	12	74.8	12	81.8		
				14	-	13	-			14	-	14	-	14	-		

WALKER COUNTY LAKE

Depth (ft) and water temperature (° F), Range 1

Nov. 5, 1959 Air temp. 76°		Dec. 9, 1959 Air temp. 48°		Jan. 29, 1960 Air temp. 34°		Mar. 4, 1960 Air temp. 39°		Apr. 20, 1960 Air temp. 78°		May 20, 1960 Air temp. 82°		July 7, 1960 Air temp. 84°		Aug. 3, 1960 Air temp. 84°		Sept. 7, 1960 Air temp. 83°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	48.4	Surf.	47.2	Surf.	43.4	Surf.	65.2	Surf.	77.5	Surf.	86.3	Surf.	84.6	Surf.	85.0
2	65.3	2	48.4	2	47.1	2	43.4	2	64.7	2	77.5	2	86.2	2	84.4	2	84.6
4	64.8	4	48.3	4	47.1	4	43.3	4	63.4	4	77.0	4	86.2	4	83.6	4	83.7
6	64.7	6	48.3	6	47.0	6	43.3	6	63.2	6	69.8	6	86.2	6	83.0	6	83.0
8	64.7	8	48.3	8	46.9	8	43.3	8	62.7	8	66.6	8	85.8	8	81.5	8	82.3
10	64.6	10	48.3	10	46.9	10	43.3	10	61.8	10	64.5	10	78.5	10	79.3	10	80.8
12	64.5	12	48.2	12	46.9	12	43.2	12	59.5	12	63.2	12	71.7	12	75.2	12	77.7
14	64.5	14	48.2	14	46.9	14	43.2	14	56.0	14	61.7	14	66.5	14	68.8	14	72.0
16	64.4	16	48.2	16	46.9	16	43.2	16	53.3	16	56.6	16	61.3	16	62.9	16	67.2
18	64.1	18	48.2	18	46.9	18	43.2	18	52.3	18	54.2	18	56.8	18	59.2	18	62,7
20	63.4	20	48.2	20	46.9	20	43.2	20	50.2	20	52.4	20	55.0	20	56.8	20	59.2
25	61.5	25	48.2	25	46.8	25	43.2	25	48.3	25	50.0	25	52.2	25	53.2	25	54.7
30	58.9	30	47.7	30	46.7	30	43.2	30	47.8	30	49.2	30	51.2	30	52.2	30	53.6
35	58.0	35	47.6	35	46.7	34	43.2	35	47.7	35	49.0	35	50.9	35	51.8	35	52.8
37	-	37	-	37	-	36	-	36	47.7	37	-	36	50.9	36	51.8	37	52.7
								38	-			38	-	38	-	39	-

Depth (ft) and water temperature (° F), Range 2

Nov. 5, 1959 Air temp. 77°		Dec. 9, 1959 Air temp. 51°		Jan. 20, 1960 Air temp. 35°		Mar. 4, 1960 Air temp. 40°		Apr. 20, 1960 Air temp. 77°		May 20, 1960 Air temp. 82°		July 7, 1960 Air temp. 85°		Aug. 3, 1960 Air temp. 84°		Sept. 7, 1960 Air temp. 86°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	48.7	Surf.	47.1	Surf.	43.0	Surf.	68.2	Surf.	76.9	Surf.	86.0	Surf.	85.8	Surf.	85.8
2	67.0	2	48.5	2	46.9	2	42.7	2	67.8	2	78.0	2	85.8	2	85.3	2	84.8
4	66.6	4	48.3	4	46.9	4	42.7	4	67.4	4	77.0	4	85.8	4	85.2	4	83.8
6	66.2	6	48.3	6	46.9	6	42.7	6	67.2	6	71.2	6	85.0	6	84.3	6	82.8
8	65.7	8	48.3	8	46.9	8	42.6	8	66.7	8	67.2	8	82.8	8	82.7	8	82.2
10	65.1	10	48.3	10	46.9	10	42.6	10	61.8	10	65.0	10	77.3	10	80.0	10	80.9
12	64.8	12	48.2	12	46.9	12	42.5	12	57.1	12	63.1	12	72.0	12	74.7	12	77.2
14	64.3	14	48.1	14	46.9	14	42.4	14	53.0	14	61.4	14	65.7	14	68.8	14	72.2
16	64.1	16	48.1	16	46.9	16	42.3	16	51.2	16	59.6	16	61.3	16	62.7	16	68.0
18	64.0	18	48.0	18	46.9	18	42.2	18	50.1	18	55.2	18	57.8	18	58.2	18	62.8
20	63.8	20	47.9	20	46.9	20	42.0	20	49.1	20	52.3	20	56.8	20	56.3	20	58.8
24	63.1	24	47.8	22	46.9	24	42.0	23	48.6	24	50.2	25	52.7	22	53.7	23	56.2
26	-	26	-	24	-	26	-	25	-	26	-	27	-	24	-	25	-

WALKER COUNTY LAKE—Continued

Depth (ft) and water temperature (° F), Range 3

Nov. 5, 1959 Air temp. 75°		Dec. 9, 1959 Air temp. 54°		Jan. 20, 1960 Air temp. 37°		Mar. 4, 1960 Air temp. 40°		Apr. 20, 1960 Air temp. 76°		May 20, 1960 Air temp. 84°		July 7, 1960 Air temp. 85°		Aug. 3, 1960 Air temp. 84°		Sept. 7, 1960 Air temp. 89°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	48.8	Surf.	46.7	Surf.	42.7	Surf.	68.5	Surf.	78.1	Surf.	85.7	Surf.	86.8	Surf.	85.4
2	67.2	2	48.6	2	46.7	2	42.6	2	68.2	2	78.1	2	85.7	2	86.7	2	84.2
4	67.0	4	48.5	4	46.7	4	42.6	4	68.2	4	77.7	4	85.7	4	85.2	4	83.7
6	66.8	6	48.4	6	46.7	6	42.5	6	68.0	6	75.2	6	82.5	6	84.8	6	82.8
8	66.0	8	48.3	8	46.7	8	42.2	8	67.7	8	72.0	8	79.3	8	83.3	8	81.6
10	65.6	10	48.0	10	46.3	10	42.0	10	67.2	10	66.6	10	77.2	10	81.6	10	81.2
12	65.3	12	47.9	11	46.3	12	42.0	12	64.8	12	62.8	12	72.8	12	72.2	12	78.0
13	65.2	14	47.7	13	-	14	41.9	14	54.3	14	61.8	14	66.8	14	68.8	13	74.5
15	-	16	-			16	-	16	-	16	-	16	-	16	-	15	-

Depth (ft) and water temperature (° F), Range 4

Nov. 5, 1959 Air temp. 78°		Dec. 9, 1959 Air temp. 56°		Jan. 20, 1960 Air temp. 38°		Mar. 4, 1960 Air temp. 41°		Apr. 20, 1960 Air temp. 76°		May 20, 1960 Air temp. 85°		July 7, 1960 Air temp. 86°		Aug. 3, 1960 Air temp. 83°		Sept. 7, 1960 Air temp. 90°	
Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
Surf.	-	Surf.	48.0	Surf.	45.2	Surf.	42.0	Surf.	70.0	Surf.	78.8	Surf.	84.7	Surf.	86.7	Surf.	86.2
2	68.8	2	47.8	2	45.2	2	41.5	2	70.0	2	78.7	2	84.3	2	86.5	2	83.0
4	68.3	4	47.7	4	44.7	4	41.5	4	69.8	4	78.3	4	83.3	4	86.2	4	82.5
6	-	5	47.6	5	44.3	5	41.5	6	-	6	77.2	5	82.3	5	86.8	5	82.3
		7	-	7	-	7	-			7	-	7	-	7	-	7	-

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